Editorial

DR. ROBERT HUGHES PARRY

Dr. Robert Hughes Parry, Medical Officer of Health for the City and County of Bristol and Professor of Preventive Medicine in the University of Bristol, retires in January, 1956.

Born in Caernarvonshire, North Wales, he received his early education at the University College of Wales, Aberystwyth. From there he proceeded to the Middlesex Hospital Medical School where, as a Lyell Scholar and Junior Broderip Scholar, he studied medicine gaining a " Conjoint " qualification in 1918. After a short spell as a Lieutenant in the R.A.F.M.S., he was appointed Casualty Surgical Officer at the Middlesex and then went on to spend three years as a Cancer Research Assistant. He graduated M.B., B.S. in 1921; in 1924 he gained his D.P.H., in 1933 M.D. (Lond.), in 1934 his M.R.C.P., and in 1943 was elected a Fellow of the Royal College of Physicians.

He first came to Bristol in 1924 as an Assistant Medical Officer of Health, but after only eleven months he returned to North Wales where, for the next three years, he practised in partnership with his wife, Dr. Joan Parry. In 1928 he returned to the City as Chief Assistant Medical Officer of Health and Assistant Port Medical Officer and two years later he was appointed as Medical Officer of Health, School Medical Officer and Port Medical Officer, succeeding Dr. R. Askins who had taken up an appointment in Rhodesia.

In 1933 the University appointed him Professor of Preventive Medicine. Since then there have been continuing and close relationships between the City Health Department and the University Department of Preventive Medicine to the mutual advantage of City and University. At the Preventive Medicine headquarters at Canynge Hall he built up a first-class chemical and bacteriological laboratory service and these facilities were offered to the general medical practitioners from an early date, thus anticipating by many years one of the most useful provisions of the National Health Service. In the last two years, under his direction, a Medical Statistical Section has been set up as a joint venture between the City and University.

During his tenure of office as Medical Officer of Health, the development of the personal health services in the City was rapid and intensive. Under his direction, the School Medical Service was co-ordinated with the Maternal and Child Welfare Service. In the thirties a big programme of hospital and clinic development was embarked upon. Thus Southmead Poor Law Institution was taken over for hospital purposes and was improved and extended; Ham Green Hospital and Sanatorium and Frenchay Park Sanatorium and Hospital were also extended and improved. Health clinics were built at Portway, Speedwell, Southmead and centrally and an integral part of the hospital and clinic service was the building up of a first-class specialist and consultant service. Dr. Parry's great experience and knowledge of hospital administration was recognized by his appointment as a member of the Advisory Council of the Nuffield Provincial Hospitals Trust. In the post-war years further clinics have been developed at Frenchay, Lawrence Weston, Brooklea, Claremont Street and Granby House and on Henbury and Hartcliffe Estates clinics are being built. It may be claimed, quite fairly, that Bristol has one of the finest clinic services in the British Isles. By offering clinic facilities to the general practitioners much has been done, too, to improve relationships between them and the health visitors.

His work has received world-wide recognition, thus adding distinction and honour to the City and the University. During the Second World War and again in 1951

he went to the U.S.A. on goodwill missions; there he visited many health departments and universities, making many good friends, some of whom have in turn paid Bristol the compliment of a return visit. In 1949 he spent four months in Greece as expert medical adviser to the American Mission. He has been an Honorary Fellow of the American Public Health Association for many years.

His colleagues in this country expressed their regard by electing him, in 1949, as President of the Society of Medical Officers of Health. Further honours included his appointment as Honorary Physician to the late King George VI and to Her Majesty, the Queen.

His personal charm and ready willingness to help those in need endeared him to his many students, colleagues and staff. He will undoubtedly be missed.

To round off a hard-working and brilliant career he will spend the first six months of 1956 as visiting Professor at Yale University, whereafter he will retire to his farm in Criccieth, North Wales. The foundations for his new " career " have been well laid and already he has been nominated as the 1958 Sheriff for his native county! He has the best wishes of all those who know him and have worked with him.

CONGENITAL BLADDER-NECK OBSTRUCTION*

BY

ASHTON MILLER, M.A., M.D., F.R.C.S. AND J. P. MITCHELL, M.S., F.R.C.S.

(*United Bristol Hospitals*)

PART I

BY J. P. MITCHELL

Mr. Miller and I wish to thank you and the Society for your kindness in inviting us to speak to the Meeting tonight. We are very happy to have the opportunity of presenting this subject to you.

Obstruction at the outlet of the bladder may arise from a variety of easily recognized conditions such as hypertrophy or carcinoma of the prostate, but after excluding such conditions where the cause of the obstruction is obvious, there still remains a large number of cases of urinary dysfunction in whom some element of obstruction can be proved from the clinical and endoscopic findings. These cases have a normal prostate, are free of any anterior urethral stenosis and show no signs of neurological disease. By simple deduction the cause must be some intrinsic disorder of the complex sphincter mechanism controlling the passage of urine. No other sphincter in the body has to be completely watertight for a normal social life in the community. The anal sphincter does not have to cope under normal conditions with a fluid content and a slight lack of control of the cardiac sphincter is in many parts of the world accepted as a compliment to the cook!

This intrinsic obstruction at the neck of the bladder can occur at all ages and in both sexes. We have seen it in the premature baby which leads us to believe in its true congenital origin and we suggest that a familial incidence may be sometimes found.

HISTORY

In the past the condition has been recognized and described by many observers under many different names, but it was not appreciated that it was the same condition appearing at different times in life. Morgagni in his *Seats and causes of Diseases* published in 1760 must be given the credit of the first description when he writes about induration of the prostate gland. This, he observed, gave rise to urinary obstruction which in turn caused either chronic retention of urine or hypertrophy of the bladder wall with reduction in its capacity. Reading carefully the word-for-word translation of his work left me with some doubt as to whether his induration might not in some cases have had a malignant basis.

The first lucid understanding of this condition appeared in 1834 when Guthrie—one-time President of the Royal College of Surgeons of England—published his book entitled *The Anatomy and Diseases of the Neck of the Bladder* in which he devotes two entire chapters to chronic thickening of the neck. It is quite remarkable how little our knowledge has advanced since this first comprehensive study. In fact, his symptoms and signs were complete and his diagnosis in the more advanced cases was evidently accurate despite the lack of the cystoscope. He even noticed the association with pouches in the bladder wall and the likely risk of urinary infection. His treatment, however, was not as rational as his clinical observations and he wanders into the mysterious realms of potions, clysters, cupping, blistering and—most horrifying of all—the application of leeches to the perineum. He did

* Papers read to Bristol Medico-Chirurgical Society.

invent a barbarous form of internal urethrotomy knife which he used on four cases, but the reader is left guessing the results!

Mercier described the condition as an abnormal muscular projection of the posterior rim of the orifice of the bladder and this he called the valve of the bladder neck. Anything which irritated the bladder neck, such as chronic urethritis, was thought to produce spasm; this spasm resulted in hypertrophy of the musculature, which in the course of time was replaced by fibrous tissue.

In 1912 Hugh Young in America gave the first analysis of a large series of one hundred cases. All of these were treated by his direct-vision punch which, except for some mechanical and lighting improvements, was similar to the punch in use today.

The possible congenital origin of this condition was first suggested in 1928 by Herbst who regarded the fibrosis as a secondary change. Five years later Marion surveyed 77 cases but made few original observations. It remains a mystery to me why this condition of obstruction at the bladder neck should so frequently be referred to as Marion's disease, when others have made greater contributions towards its understanding. Marion *did* take full advantage of the French language which lends itself to vivid description, particularly of delicate subjects such as micturition.

The latest and most comprehensive survey was given by Badenoch of St. Bartholomew's Hospital in his Hunterian Lecture just after the last war. All his cases were associated with diverticulum of the bladder or bilateral hydronephrosis. In fact, he made the detection of one of these complications the criterion of diagnosis of bladder-neck obstruction.

The object of our papers is to show that a diagnosis can be made at an earlier stage in the condition before these complications have developed. I shall quote examples of the condition as it has been encountered in all age groups and in both sexes. It is possible in this way to build up a life history of the lesion.

CLINICAL FEATURES

In the early stages this condition produces merely a disturbance of micturition, such as enuresis in the first three decades, or frequency and urgency in later life. With only slight obstruction the consequent hypertrophy of the wall results in a hypertonic bladder of small capacity. As the condition progresses urine is retained in ever-increasing quantities until ultimately a state of chronic retention with overflow incontinence is reached, or occasionally acute retention supervenes. This is regarded as stage two. Finally, the chronically distended bladder may cause back-pressure on the ureters and kidneys followed by hydronephrosis and renal failure. The upper urinary track may, however, be saved by the formation of a diverticulum of the bladder wall. In the past many of these unfortunate patients have been dubbed " neurotics " in the early stages. When the condition was more advanced they were diagnosed as having idiopathic atonic bladders or diverticula of unknown origin.

If the urine becomes infected at any stage in the progress of the disease the symptoms may be modified. In fact it is often an infective episode which first brings the patient to his doctor. Some patients have presented merely with recurrent attacks of pyelitis, cystitis or a somewhat indeterminate condition known as prostatitis.

During the past four years 314 cases have been examined and treated in the Urological Unit at Bristol.* In an earlier communication to the Royal Society of Medicine (Mitchell and Andrews, 1953), 73 cases were reported and most had been admitted under the care of Mr. Ashton Miller. The rest of the cases have been shared between us during the past two and a half years.†

* We are indebted to Mr. A. Wilfrid Adams for kindly allowing us to include a number of his patients whom he has treated in the past two years. We would also like to thank Mr. Adams for the advice and helpful criticism from his fertile imagination.

† I must thank Mr. Keith Chitty, senior registrar to the Department of Urology, who has given us invaluable help with this work in the past two years.

No case was included in this series if any of the following features were present:

1. Any significant prostatic enlargement palpable on rectal examination.
2. Any evidence of malignancy either clinically or histologically.
3. Any neurological signs which might account for a disturbance of bladder function.

After excluding all such cases the remaining 314 cases were accepted as true bladder-neck obstruction. There are in this series ten patients in whom the bladder-neck obstruction followed some months after an open operation for prostatectomy. I would here emphasize that rectal examination in all cases revealed a prostate which was quite normal both in size and consistency.

TABLE I

TEN-YEAR AGE GROUPS

Infancy	9	patients
5–15 years	55	,,
16–25 years	18	,,
26–35 years	27	,,
36–45 years	32	,,
46–55 years	58	,,
56–65 years	52	,,
66–75 years	48	,,
76 years and over	15	,,
Total	314	patients

Table I shows the number of patients in each ten-year age group. It will be noticed that the incidence steadily increases up to the peak in the 46–55 decade; the figure is still maintained in the next decade but this is due partly to the cases of post-prostatectomy obstruction. It will be seen that the highest age incidence is therefore ten years prior to the age of onset of prostatic hypertrophy.

In the neo-natal period and in infancy the condition is seldom recognized unless retention occurs and the child is found to have a distended abdomen caused by a full bladder. One male infant was stated by the parents to go twenty-four hours without passing water, but what brought them to the doctor was the apparent straining and the crying just before micturition.

After the age of five the condition may be found as a result of investigations for recurrent attacks of urinary infection or for enuresis. A percentage of enuretics are found to have a true organic basis, of which bladder-neck hypertrophy is one. The usual history obtained in these cases is that the child was dry by night as well as by day from the age of three or four years, but after two or three dry years the child again relapsed into enuresis.

The child with slight obstruction proceeds to adult life with only slight disability. After puberty enuresis may disappear but frequency and urgency remain throughout life. These patients will say that they have always had a " small bladder " and they have never been able to last out the full programme at the cinema, even though they only see the programme through once. They may complain of difficulty and a poor stream with occasional attacks of pain on micturition. Hesitancy is often volunteered; the patient will tell you that he has to stand for several minutes before he can start in a public urinal and even when he has started two or three others will have relieved themselves completely before he has finished. In fact it is the story of the old prostatic gentleman appearing in a much younger age group. Most of the patients in the first two decades of adult life gave histories of enuresis in childhood after the age of six.

In the later age groups frequency is still the most common symptom though a

form of incontinence may re-appear. This may be a true incontinence severe enough to be very distressing to the patient, but in others it is an overflow incontinence due to chronic retention. Acute retention brings some patients into hospital as emergencies, while occasionally investigation for haematuria reveals a large infected diverticulum. A symptom which is difficult to explain is the loin pain without frank infection or demonstrable dilation of the kidney. This is not uncommon and usually disappears when the bladder-neck obstruction is relieved.

The patient may reach the prostatic age group before his symptoms really inconvenience him. In fact, a moderate hypertrophy of the prostate may be sufficient to bring on symptoms in a patient who has only a mild degree of intrinsic bladder-neck obstruction; neither the small adenoma nor the milder bladder-neck obstruction alone would have taken the patient to his doctor. I would here point out that, though adenoma of the prostate and congenital bladder-neck obstruction are separate entities, they can occur simultaneously in the same patient. There are, however, still some cases of pure bladder-neck obstruction which first present at the prostatic age, having been slowly progressive throughout life. At this age and with no clinical or cystoscopic evidence of prostatic enlargement, this condition has been given the term " prostatisme sans prostate ".

In the female the symptoms are remarkably similar. In fact it is quite surprising sometimes to see how closely bladder-neck obstruction in the female resembles prostatism in the male. Infection is even more liable to occur than in the male and is usually of a more intractable nature.

ENDOSCOPIC FINDINGS

To investigate these cases cystoscopically it is essential to use an irrigating cysto-urethroscope. The salient feature of this instrument is the short focal distance whereby objects as near as 3 mm. can still be in focus. By this means both the posterior urethra and bladder can be examined with the same instrument. Irrigation is necessary both to distend the posterior urethra where possible and to clear the field of vision. On introducing the instrument, difficulty may be encountered as the beak reaches the bladder neck and often the shaft of the instrument has to be dipped considerably before it will pass on into the bladder. The bladder is inspected for stone, diverticulum or neoplasm. The prostatic urethra is then viewed for evidence of early prostatic hypertrophy. Finally, the bladder neck itself is examined.

The presence of trabeculation is the cardinal sign in cytoscopic examination, and we believe that if the trabeculation persists on full distension of the bladder and is spread over the entire bladder wall, then it must be regarded as signifying some definite obstruction. At the bladder neck some degree of thickening may be seen but the localization of this thickening appears to vary. In some it extends from four to eight o'clock posteriorly, forming the classical median bar (Fig. 1). In others, particularly in children, it may be localized laterally at three and nine o'clock forming a pillar on each side of the bladder neck (Fig. 2). In the majority of cases a collar of thickening exists around the entire circumference of the internal urinary meatus (Fig. 3). As the cystoscope is withdrawn into the prostatic urethra the trigone appears to rise sharply up to the neck which then drops away equally sharply into the posterior urethra revealing a pouch below the bladder neck. This sometimes even undermines the bladder neck. If the trigone is also hypertrophied, these appearances will be modified.

The other helpful diagnostic sign is obtained with a finger *per rectum* at the time of the cystoscopy. The amount of tissue felt between the examining finger and the cystoscope being a guide to the degree of hypertrophy; only very occasionally can this bar be felt without an instrument present in the urethra. Figure 4 illustrates diagrammatically the thickening palpable against the cystoscope compared with the normal above.

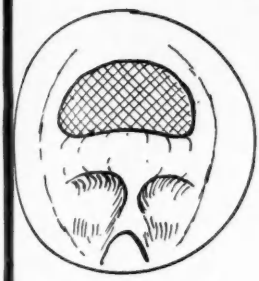

FIG. 1. *Median bar.*

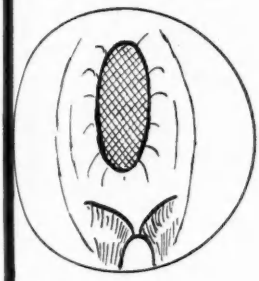

FIG. 2. *Lateral pillars.*

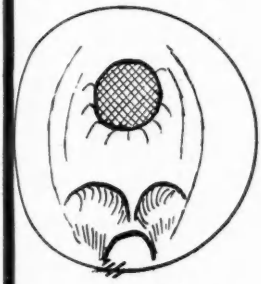

FIG. 3. *Collar thickening.*

The appearances of the internal urinary meatus when viewed from the posterior urethra at the level of the verumontanum.

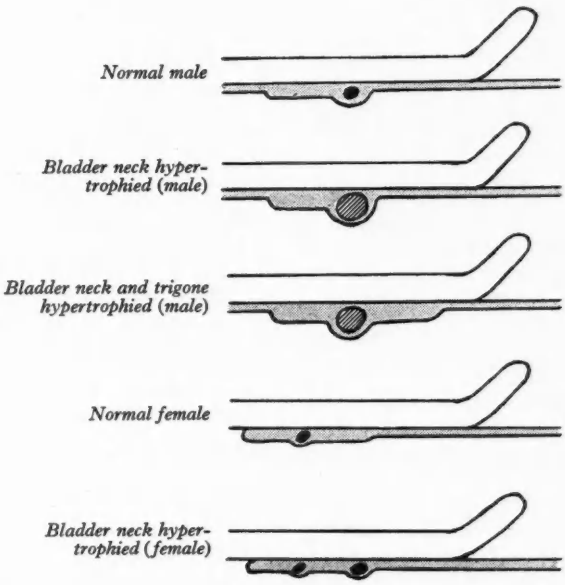

FIG. 4. *The amount of tissue felt between the examining finger* per rectum *and the cystoscope at the bladder neck.*

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TREATMENT

During the nineteenth century various instruments were designed to cut the bladder neck blindly, the only control being a finger *per rectum*. As already mentioned, Guthrie used an internal urethrotomy knife as early as 1830. Mercier improved on this with a punch designed on the lines of a lithotrite. Towards the end of the century Chetwood in America was resecting with a galvano-cautery knife.

In the early 1900's, Young was attempting to relieve bladder-neck obstruction by a perineal approach, but found this unsatisfactory particularly in young men in whom the whole prostate had to be sacrificed. He abandoned the perineal route

in favour of the suprapubic transvesical approach. Finally, he designed his punch and was the first to resect the median bar transurethrally under direct vision.

His first operation was performed on an out-patient under local cocaine anaesthesia in 1909. By 1913 he reported the results of one hundred cases of median-bar obstruction which had been operated by transurethral approach.

In 1931 McCarthy brought out his modification of Stern's first loop-cutting machine and produced the first successful resectoscope. In the last twenty years various minor mechanical improvements have been made, but the principle of the machine is essentially the same.

If the symptoms are purely obstructive then the relief is immediate and dramatic, but if frequency is the chief complaint, then little improvement can be excepted within the first few weeks. The frequency is probably due to hypertonicity of the bladder with its reduced capacity. This bladder has a thickened wall and will take several weeks after operation to return to its normal shape and size. Patients should, therefore, be warned that relief of their frequency will not be immediate and the maximum benefit may not be noticed for three to six months.

The indications for surgical treatment were either the presence of complications such as hydronephrosis, diverticulum or chronic retention of urine, or the distressing nature of the symptoms in the earlier stages of the disease. Transurethral resection, using a valve machine for the cutting current, was the method of choice in most cases. The valve diathermy produces a current of much higher frequency than the spark-gap and this cuts the tissues like cheese with a minimum of charring. The extent of the resection necessary was judged from the appearance of the bladder neck and, in view of the narrow margin of error, a finger *per rectum* is essential in the final stage of resection. The transvesical approach is used in the event of additional intravesical pathology such as stones or diverticula. However, we are convinced that a more accurate clearance is obtained with the resectoscope than by open operation.

Every operation has its hazards, even when the patient has survived the anaesthetic, and transurethral resection is no exception. An error of judgment in the site and depth of a cut is liable to happen occasionally in the most experienced hands, but provided a perforation into the peri-vesical tissues is recognized and the appropriate action taken immediately, little harm can come. An adequate resection should remove sufficient tissue to destroy temporarily the action of the internal sphincter, just as happens after an open prostatectomy. This will result in sterility as the semen will pass into the bladder and not down the urethra with ejaculation. Usually this is only a temporary feature, but just occasionally permanent sterility may result and this is of some importance, particularly in the younger age groups.

It is not an operation to be undertaken lightly and should always be regarded as equal in severity to an open prostatectomy. Patients are always kept in hospital for twelve days to cover the period of secondary haemorrhage. Sometimes a minor flare-up of urethritis and prostatitis may occur even a week to ten days after returning home.

Cases of mild obstruction at the bladder neck may respond simply to dilation of the urethra though this usually gives only a temporary relief. It may, however, be sufficient to interrupt the vicious cycle of obstruction, mild chronic infection and further obstruction from oedema. I venture to suggest that this may explain the occasional curative value of a simple cystoscopy.

ILLUSTRATIVE CASES

The following examples are shown to illustrate the points I have made and to show the condition in each decade of life:

1. **B.E.E.** A boy aged 7, who is a patient of Dr. Cameron of Bedminster, Bristol, was admitted to hospital in acute retention having had three previous attacks. He also had a history of enuresis every night since birth and investigations showed that he had a typical bladder-neck obstruction due to thickened latteral pillars (Fig. 2).

Transurethral resection was performed, since when he had had no enuresis.

Review one year after operation confirmed no further attacks of acute retention.

2. **K.F.R.** A lad of 17, referred by Dr. Chapman of Redland, Bristol, had had enuresis every night since birth and there was a family history of similar trouble in the father and one male cousin. He was an intelligent boy with a good scholastic record.

Investigation again showed thickened lateral pillars (Fig. 2), which were resected by the transurethral route.

Immediately after operation there was some improvement, in that he was dry provided he emptied his bladder at 4 o'clock every morning.

Eighteen months later a letter received from his mother stated that he had been completely dry for the past year.

3. **D.C.B.** A patient of Dr. Sinclair of Filton, Bristol, was referred by Mr. McPherson of Southmead Hospital.

He was a young man of 22 who presented with acute retention, having had scalding pain on micturition and a diminished stream for the past four years.

Investigation showed a grossly trabeculated bladder with a thick and raised median bar (Fig. 1).

Transurethral resection relieved the retention, and when seen eight months after operation he had a good free stream and no pain on micturition. At that stage he had not yet recovered normal ejaculation.

4. **C.C.R.** Aged 37. A patient of Dr. Kevin Burke of Patchway, Bristol, presented with a history of enuresis all his life and frequency amounting to half-hourly by day and six times at night.

Cystoscopy showed a typical bladder-neck obstruction due to thickened lateral pillars (Fig. 2).—

A transurethral resection was performed which gave immediate relief of his enuresis.

Three months after operation his frequency amounted to only four-hourly by day and once or twice at night, but ejaculation was still absent.

I have recently received a letter from him telling me that he is now symptom-free and ejaculation is once again normal.

5. **K.W.H.** Aged 49, was referred by Dr. Woolley of Wells, Som. He presented with a history of frequency one-hourly by day and two to three times at night for the past ten years. He also had slight but aggravating right-loin pain.

Investigation showed a normal upper urinary tract, but cystoscopy revealed a trabeculated bladder with a typical median-bar obstruction (Fig. 1).

A transurethral resection was performed but this gave no improvement for the first three months.

At the end of nine months, however, his frequency was only two to three-hourly by day and nil at night. He also volunteered the information that his stream is now much freer than ever before.

This case illustrates the delay in recovery if the presenting symptom is simple frequency.

6. **H.J.S.** Aged 65, was referred by Dr. Henderson of Thornbury, Glos. This patient, in the prostatic age group, presented with frequency, difficulty, hesitancy and pain on micturition. He had also had recurrent attacks of epididymitis.

On investigation his urine was heavily infected, he had a small round thick-walled bladder and a thickened collar at the bladder neck (Fig. 3).

Transurethral resection gave immediate relief of the difficulty but he had persistent frequency and pain on micturition for four months after operation.

When seen fifteen months after his operation he was symptom-free and the urine was clear.

7. **J.J.M.** Aged 77, was referred by Dr. Mahood of Bishopston, Bristol. This old gentleman presented with a history of hesitancy, poor stream and pain on micturition for twenty years. His bladder was distended up to the umbilicus, soft and painless and the urine was clear.

Cystoscopy revealed a typical median bar with no trace of prostatic hypertrophy.

Transurethral resection was complicated by a post-operative epididymitis, but one year later he was very well, passing water freely with a good stream and frequency amounting to two- to three-hourly by day and nil at night.

This is a typical example of "prostatisme sans prostate".

Many normal people have an occasional disturbance of micturition often precipitated by some emotional stress. Some of us may have experienced hesitancy in starting to pass water during the interval at Twickenham when there is a crowd waiting behind, and you may ask me whether this constitutes bladder-neck obstruction. Well, maybe it is in a mild degree, but obviously the limited inconvenience does not justify a resection of the bladder neck!

Clearly it is not easy to assess where the normal ends and pathology begins in

many branches of medicine, but I have tried, this evening, to convince you that there *is* a stage in this condition before hydronephrosis occurs or diverticula of the bladder are produced, in fact before even a residual urine is obvious. In this early stage the symptoms can be very distressing and for these patients much can be done. By far the majority of them will be every bit as grateful as the old gentleman who has had an uneventful prostatectomy.

PART II

BY ASHTON MILLER

Mr. Mitchell has given you a paper most of which is fact and very little fancy. It is my part to deal with the condition of bladder-neck obstruction as it is found in children and in women—not so much will therefore be fact and rather more fancy, as you might expect. One reason for this difference is, of course, that methods of accurate cystoscopic and radiographic examination in young children have been available for only about ten years since men like Meredith Campbell in the United States led the way a few years before. Another reason is, possibly, that intrinsic diseases of the female urethra have long been just a little beneath the dignity of the surgeon, the urologist and possibly the gynaecologist also.

We have been able to carry out detailed examination of the urethra in children and women during the last ten years and it leaves no doubt at all in our minds that this condition of bladder-neck obstruction exists in the child of both sexes and in the adult woman as well as in the adult male.

BLADDER-NECK OBSTRUCTION IN CHILDREN

Let us consider the children first: the earliest age at which we have been able to confirm the diagnosis of bladder-neck obstruction has been in a baby that was born three weeks prematurely with a distended bladder. Another case was recognized ten days after a full-term delivery:

Baby O. Born at Southmead Hospital, an apparently normal male child which lost weight continuously. The abdomen was noticed to be distended and on the eleventh day this distention was found to be due to a large bladder; there was a bilateral hydronephrosis and hydroureter and the blood urea was then 55 mg. per cent. Urine dribbled away *per urethram* constantly.

Operation was performed on the twelfth day. The bladder was grossly hypertrophied and the internal meatus narrow. No urethral valves could be demonstrated by passage of a sound down the urethra from the bladder. The posterior half of the thick bladder neck was excised. Convalescence was uneventful and subsequently he voided urine normally without residual urine in the bladder.

At the present date his micturition is normal but there is still a moderate bilateral hydronephrosis with a slightly raised blood urea level.

Baby L. Born three weeks prematurely and found to have a distended bladder and to pass only a few drops of urine. Immediate operation was performed and a similar portion of bladder neck resected.

Progress has been satisfactory after a period when recurrent urinary infections were a nuisance.

It is pleasant to thank Dr. Beryl Corner and other paediatricians for referring these cases to us.

These cases make it reasonably certain that the condition occurs in the foetus and is therefore congenital. We can also draw the conclusion that, because hypertrophy of the bladder due to urethral obstruction can occur in the foetus, the normal infant's bladder fills and empties *in utero* and micturition into the amniotic fluid occurs. It is obvious that the maternal kidneys do most of the work of electrolyte and urea excretion but it is possible that the foetal kidney could be concerned with fluid balance in the baby.

Other neo-natal cases have been seen and treated during the past few years with a similar history to those already given.

These infants have varying degrees of urinary obstruction with secondary renal failure. It is unusual for anybody to notice anything wrong with the micturition of a baby—even retention with overflow sometimes goes unrecognized because the baby is " always wet " and most people think that babies pass urine so often that they can be normally always wet! A distended bladder is sometimes felt by a doctor who is looking for it but rarely noticed by a parent or even a nurse. Usually it is the onset of renal failure which allows the diagnosis to be made and this is shown by the failure to gain weight, a disinterest in feeding—whether breast or bottle—and occasional vomiting after feeds. This picture can continue for weeks or even months and then suddenly the circle becomes vicious, vomiting and diarrhoea usher in dehydration which effectively stops completely the actions of the kidneys with rapid progress in a few hours to coma and death—the typical sudden death which occurs in chronic renal failure. The clue to these cases is the distended bladder and, of course, successful treatment of the urinary obstruction depends upon early diagnosis in relation to the course of the disease. It is true that a distended bladder may be easily felt in a normal baby on occasions because at that age it is an abdominal organ when full, but when micturition occurs it empties completely.

Another surprising way in which this condition can present in the child is by acute retention of urine; this is painful and just like that in an adult but it is often relieved spontaneously in a hot bath which allows micturition to start and the bladder is completely emptied—just as if the trigger is too stiff to pull and needs oiling. Passage of a catheter into the anterior urethra will sometimes start micturition in these patients; the hypertrophied sphincter is apparently in spasm. Here is a history of such a case:

Baby H., aged 18 months. This child had been admitted to hospital elsewhere on three occasions with acute retention of urine. On each occasion urethral instruments were passed and the retention was relieved; at the last admission the surgeon, Mr. Edrich Wilson, felt a bridge of tissue on rectal palpation against the cystoscope and referred him to the Children's Hospital. Investigation has confirmed the bladder-neck obstruction and has shown in addition that there is ureteric stenosis on both sides. Suitable operative treatment is in progress.

For every dramatic case such as I have described there are undoubtedly quite a large number of mild cases which escape notice until the age of 3 to 5 years. At this time they are commonly enuretic. Typically they have a little frequency in the day-time with some urgency—Daddy must stop the car immediately on demand, there is no question of choosing a nice wood in the next mile or two. It is this which gets them labelled " incontinent "; in the lay sense of the word they are, of course, but in the medical sense they simply must micturate when they have the desire and are not truly incontinent in the sense that anything that runs into the bladder immediately runs out because there is no adequate sphincter mechanism. A familiar complaint is that the teacher at school will not let the child go out to pass urine when he wants to. Many schoolteachers are extraordinarily helpful and allow these children to go out without asking each time; which is surely the best and kindest way. This urgency of micturition—a hair-trigger this time—occurs whether they are awake or asleep.

Case of S.P., aged 3 years, referred by Dr. A. L. Pirrie. Chief complaint was dribbling micturition. He had always had frequency and difficulty and had never passed a proper stream of urine. He was enuretic every night.

Examination showed a healthy-looking child with a bladder distended to the umbilicus. He voided urine with a dribble by straining. The urine contained many pus cells and organisms. The blood urea was normal. Intravenous pyelography revealed a functionless right kidney and a hydronephrosis on the left side.

Cystoscopy showed a thick bladder neck and a trabeculated bladder. The right ureteric orifice was wide open but the left one was normal. There was a diverticulum on the left side of the bladder. Suprapubic cystostomy was first performed and these findings confirmed. Three months later the functionless right kidney and ureter were removed and excision of the bladder neck followed shortly afterwards. Progress to normal micturition was rapid but recurrent attacks of cystitis occurred until the diverticulum was removed a year later. Since

then he has been dry both during the day and at night, being last seen five weeks ago. A recent pyelogram shows that the hydronephrosis is smaller and that the ureter has returned to normal.

You will ask me how many enuretic children have bladder-neck obstruction and I must answer simply that I cannot give you a figure or a percentage yet and can only say that a significant number have it. In 1951, Dr. Mary Boyd, Registrar at the Bristol Children's Hospital, investigated many enuretic children and combined for the first time the reports of the paediatrician, the psychiatrist, the urologist, the radiologist, even the results of the electro-encephalograms. The results have not all come to light yet but I can tell you what we found in the urinary systems.

All told 84 boys and 45 girls were investigated between the ages of 5 and 13 years. inclusive. These were patients referred to the Children's Hospital and the method of selection out of the total number of enuretics in the child population was not accurately known. For example, no conclusion can be drawn from the fact that twice as many boys as girls were examined—this may be accidental; also we may well have encountered the worst enuretics.

Between the ages of 5 and 9 years one-quarter of those examined had an abnormal bladder, viz., 28 out of 90; between 10 and 13 years a higher proportion were abnormal, viz., 14 out of 34, or about one-third. The abnormality consisted of a definite hypertrophy of the bladder wall seen through the cystoscope combined with a thickening of the internal sphincter at the bladder neck palpable by the finger *per rectum* against the cystoscope shaft—a method which Mr. Mitchell invented and which reduces the hazard of personal error in observation. We believe that these children have bladder-neck obstruction which results in a bladder muscle hypertrophy, producing a hypertonic bladder which requires more central inhibition both awake and asleep than exists normally at this age. In only one case have we found a possible urethral valve as was recently described by Innes Williams (1954).

We would stress, though, that these proportions are not accurate, we can only say that there is no doubt at all in our minds that it is a mistake to treat a case of persistent enuresis in an otherwise normal child over the age of five without urological examination to exclude organic urinary obstruction, especially when such clues as, for example, frequency and urgency by day and inability occasionally to sleep through a whole night and be dry, exist to lead us to the correct diagnosis. It is not so much that these patients should be treated surgically—far from it—it is not fair to the psychiatrists to give them a child with an organic lesion to work on.

It is an interesting fact that bladder-neck obstruction can very occasionally exist in a child without enuresis—the child wakes up at night and gets out of bed to pass water. We do not know why this happens. Sometimes, not really uncommonly, attacks of urinary infection are the reason why the child comes to the doctor; we have found this is mostly true of girls, and this observation also applies when the condition is met in the adult woman. A recurrence of enuresis after the child has been quite dry at night for several months or years indicates in every case in our experience a true organic bladder-neck obstruction.

We have unconsciously, perhaps, divided the cases into slight, moderate and severe, slight being common and usually needing no surgical treatment, moderate is not so common and has not usually been treated by surgery, severe is rare but always needs surgical treatment. The slight cases appear always to lose their symptoms and stop enuresis at puberty if not shortly before, though it is possible, of course, that they may have trouble later in life. The moderate cases are not so fortunate for enuresis often persists for some time into adult life and other vague symptoms related to micturition and the genitalia may cause the diagnostic refuge of neurosis to be sought. We have always cystoscoped the child first and then waited a few months to see if there is any improvement; in bladder-neck obstruction improvement seldom occurs and, if it does, relapse is common within a short time. If the child is enuretic and we find the bladder and urethra normal, then it is sometimes times a surprising and gratifying result of instrumentation that enuresis ceases from

that day on. You can speculate as much as you like as to why this occurs; possibly Mr. Mitchell's explanation may be the right one—we do not know. All I can tell you is that it has been known as an empirical treatment of enuresis for several generations. The uncomfortable micturition which follows cystoscopy for about twenty-four hours may certainly be a powerful suggestive factor.

SURGICAL TREATMENT

Let me tell you something of the operation which is done. In the neo-natal cases all operating has to be done through the open bladder and a pair of conjunctival scissors is used to remove a large part of the internal sphincter at the outlet of the bladder, only the periphery of the muscular ring being left behind. The bladder is then closed leaving a minute catheter in the urethra. None of this surgery in the neo-natal period would be possible without the exceedingly skilled co-operation of the anaesthetist so I would like to thank Dr. Torry Baxter for his remarkably efficient and successful help with all these babies that we have operated on. The nursing is also a highly skilled job to which I would like you to give a thought. In both the male and female child over the age of 2 years it is possible to perform the same operation transurethrally with an instrument which is a small version of the resectoscope we use in adults. This was specially designed for use at the Children's Hospital. The female urethra can be stretched a good deal without harm—it is recorded in an old French urological work that a finger could be inserted into the dilated adult female urethra in order to palpate a calculus in the lower end of the ureter against a finger of the other hand in the vagina. Today the radiologist has given us a more refined and less traumatic method, so the recollection does no more than remind us that dilatation is permissible in the female. In the male this is emphatically not so. Luckily there is a way round the difficulty because the bulbous urethra in the perineum is easily wide enough in the child and adult to take quite large instruments; so we introduce them direct through the perineum, do the operation and then allow the hole to close up again, which it usually does in about 48 hours with no leakage afterwards and no stricture formation. This is an arrangement undoubtedly thought of by nature for the special benefit of urologists, otherwise everyone of us would be permanently followed by a stream of old patients with urethral strictures shaking their fists and saying—" Look what you did to me, doctor! "

The margin of error in this operation in a child is small but vision is good—it has to be—and a finger *per rectum* certainly makes it safer.

The results have certainly justified the operation; we have performed it 33 times in children without untoward result. One child is certainly no better but all the others have shown improvement and in some cases the result has had a fine dramatic quality in that enuresis has stopped from the day of the operation and not recurred. In some cases we have erred on the side of caution and removed too little and had to do the operation a second time. It is satisfactory in a way to be able to prove that this condition exists by removing the obstruction and producing a cure.

BLADDER-NECK OBSTRUCTION IN WOMEN

In the adult woman we see this condition in the twenties, thirties and forties, but it does not seem to be such a common cause of symptoms as it is in men in these decades. The usual picture is of recurrent attacks of urinary infection, the accent being on the lower urinary track rather than on a pyelonephritis, in other words they have frequency, nocturia and pain with micturition as their chief symptoms, rather than pyrexia, rigors and pain in the back. I do not mean to suggest that pyelonephritis never occurs as a complication for this would not be true; I am sure that recurrent attacks of urinary infection in the female are worth investigation and efficient treatment, not only because of the disability caused but also because of their long-term results, chronic pyelonephritis with renal failure with or without hypertension and the unpleasant complications of pregnancy which can occur—and often be more lethal to the child than the mother.

We have to admit though that we can never diagnose a bladder-neck obstruction in an adult female before cystoscopy as it is possible to do sometimes in the male. Adult enuresis may occur but is very uncommon indeed in women, the vast majority of cases may have been enuretic as a young girl and then have apparently normal micturition until a sudden attack of urinary infection occurs and recurs after treatment. Investigation by clinical examination and pyelography shows nothing abnormal and it is only the cystoscopy that reveals the diagnosis. But we probably cystoscope twenty normal patients who have this story for every one who has a bladder-neck obstruction—it appears that identical symptoms can exist in the female without an underlying organic abnormality. Also, it seems that recurrent attacks of urethritis in the female can produce an inflammatory fibrosis with stricture formation, resulting in urinary obstruction and the same symptoms. Cysto-urethroscopy easily distinguishes the two conditions in their early stages but there is more than a little confusion because it seems that the two conditions can exist together in the more elderly patient.

We have investigated and treated twenty-one examples of the condition in the adult female, performing a transurethral resection in all cases. The results are not as good as in the male, possibly because the field is so often clouded by other things such as prolapse and cervicitis which themselves result in urinary dysfunction. There is no doubt that in the early uncomplicated case the results are excellent.

Here is the case history of a typical example:

> **Patient Miss G. aged 20.** She had been enuretic every night of her life. She micturated about every hour during the day and urgency was marked. Her brother had died of kidney trouble at the age of four years. There were no abnormal physical signs on examination. The urine was normal. Intravenous pyelography demonstrated normal kidneys with stasis in the lower ureters. Cystoscopy showed marked trabeculation of the bladder. Transurethral resection of the bladder neck was performed and she wet the bed only thrice in the first month after operation.

This case raises the fascinating question of the familial incidence of this condition. We have the distinct impression that it really is familial but, of course, have not had sufficient opportunity to verify this.

In contrast to this last case history let me give you a typical example of the infective type in a woman of 41:

> Eight years ago she had an attack of "cystitis" following exposure to cold, with several recurrences in the next two years, treated successfully with sulphonamide. Cystoscopy and urethral dilatation were performed without much relief. She saw two London surgeons who performed dilatation, and then she saw another local surgeon who performed diathermy coagulation of the bladder neck with some relief for about a month. She then had to micturate twice or more at night. A course of N.A.B. was given without benefit.
>
> Cystoscopy showed normal bladder mucosa with thickened urethra when palpated against the cystoscope.
>
> Transurethral resection of the bladder neck was performed. Histology showed chronic inflammatory fibrosis. Four months later, after a stormy convalescence, cystoscopy showed an almost normal urethra. Shortly afterwards her symptoms disappeared, and micturition to normal.

Not all patients are so typical as these two women who serve just as illustrations. In cases such as these we feel ourselves on sure ground, but in many, I regret to say, there is no such feeling and we are reminded once again that we have a lot to learn.

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CANCER OF THE UTERUS

BY

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Apart from sarcoma of the uterus and chorionepithelioma which are both extremely rare, malignant disease of the uterus may be considered under two headings, cancer of the cervix and cancer of the body. In Bristol in 1950 cancer of the uterus accounted for 10 per cent. of female cancer deaths. In comparison breast cancer caused 17.4 per cent. of female cancer deaths.

CANCER OF THE CERVIX

The general practitioner can help us greatly in the treatment of cancer of the cervix by referring cases earlier. Here are two examples:

A married woman, aged 41, who was seen by me at Oxford one October had been to her doctor in April the same year with irregular menstruation. She had been treated by rest and Stilboestrol, and no pelvic examination had been done. She was a busy woman, owner of a café by the river, and dependent largely on the summer trade for her living. Seven months later the same doctor saw her again and on pelvic examination was horrified to find unmistakable signs of cancer of the cervix.

A married woman, aged 31, referred to me by a Bristol practitioner had a complaint of irregular menstrual loss and contact bleeding. The doctor had passed a speculum and had diagnosed cancer of the cervix before referring her to out-patients'. The cancer was still confined to the cervix and I treated her with radium followed by Wertheim hysterectomy and pelvic lymphadenectomy. There was no evidence of tumour in the excised lymph nodes. This woman is well with no sign of recurrence nearly two years afterwards. I dare to hope she may be cured.

Better far to feel with a finger or see with a speculum than be humiliated by a hormone!

Of course, many patients delay seeking medical advice, and doctors cannot be held responsible for this. On the other hand, a few cases progress so rapidly that in spite of early diagnosis not much can be done, for example:

A married woman, aged 31, whom I saw recently had had symptoms for only 3 months. The complaint was of pain down the left leg and in the left groin. This patient had extension of cancer of the cervix out to the lateral pelvic wall, involving the left obturator nerve, and also blocking the left ureter so that the kidney on that side had ceased to function. (Pain as an initial symptom occurs in only 2 per cent. of cases (Way, 1951). It is usually a late symptom of untreated cases indicating involvement of nerves or the presence of bone secondaries.)

DURATION OF SYMPTOMS

Three months is a relatively short delay: the time-lag is often much worse as can be seen from the Report of the South-Western Regional Cancer Records Bureau, 1950 (see Table I).

TABLE I

TIME-LAG BETWEEN FIRST SYMPTOMS AND TREATMENT

Site	3 months or under (per cent.)	3–12 months (per cent.)	Over 1 year (per cent.)	Over 2 years (per cent.)
Uterus	34	28	14	24
Breast	38	30	10	22
Lip and Mouth	24	28	20	28

Probably in more than 50 per cent. of cases the time-lag is the patient's own responsibility (Way, 1951), for such obvious reasons as onset of menopause, fear, and even erroneous neighbourly advice. Many give no reason for the delay. May I suggest that more efficient, more frank education about the menstrual function, probably at school (*not* " cancer education ") will help greatly to obviate delay in seeking medical advice when menstrual irregularities occur?

But more important, there is medical delay. Of 56 cases Way states that 25 consulted their doctor within one month, yet only 12 were sent to hospital at once, and one other refused to go for a year. The remaining 12 were not referred until they had had symptoms for 3–17 months, and in none was vaginal examination carried out. An important rule for the general practitioner is:

Do not wait for the bleeding to stop before passing the speculum.

SYMPTOMS

In 90 per cent. of cases the primary complaint is vaginal haemorrhage or blood-stained vaginal discharge, especially after coitus, douching, micturition, or vaginal examination.

AGE INCIDENCE

Eighty-five per cent. of the cases are between 40 and 70 years of age. The youngest I have seen myself was aged 24. Thus, it cannot be too strongly emphasized that irregular vaginal bleeding occurring after the age of 40 is strongly suggestive of carcinoma of the cervix, and should be regarded as due to this until proved otherwise. The proof will be obtained by examination of the cervix with a speculum and, if necessary, by biopsy and histological examination.

SIGNS

In the early stages the cervix will show erosion with raised everted edges. It will bleed probably on examination or certainly when touched. In the more advanced cases parts of the growth will break off and the vaginal discharge will be not only haemorrhagic but offensive as well because of superimposed infection. The growth will feel hard and irregular. Later there may be either a cauliflower growth coming down the vagina from the cervix or cavitation due to an ulcerative process and the cervix will be almost completely absent. There will also be fixity of the uterus due either to the growth invading the lateral ligaments or to infection. Secondaries in bone are late and are usually sacral and vertebral.

It is common for authors of textbooks to make a great point of the clinical staging of cases of carcinoma of the cervix e.g.:

Stage I. Tumour limited to cervix.

Stage II. Tumour involves vaginal vault and/or one or both parametria but no fixity.

Stage III. Tumour involves one or both parametria and growth is fixed to pelvic wall, or tumour encroaches on lower third of vagina.

Stage IV. Tumour invades bladder or rectum or there are metastases outside pelvis.

Unless the same person is doing it all the time this clinical staging (under anaesthesia) is very difficult to assess accurately. Even cases labelled Stage I may be in fact Stage IV, for example, there may appear to be a Stage I growth but the patient also has haematuria indicating bladder involvement. At a cancer conference in Newcastle some years ago Way invited four well-known gynaecologists to ' stage " a case of carcinoma and he found that each gynaecologist put it into a differ nt stage. This may account for differences in results reported from different centres.

PATHOLOGY

In most cases cancer of the cervix is a squamous-celled growth arising from the junction of the squamous epithelium with the columnar epithelium at the external

os. Adenocarcinoma of the cervix is rare and arises in the region of the cervical canal; it is more malignant and less amenable to radiation therapy (see Fig. 1).

The spread of cancer of the cervix is directly from the cervix on to the vaginal fornices and in the late stages into the bladder (vesico-vaginal fistula) and into the rectum (recto-vaginal fistula). Spread also occurs along the lymphatics into the lateral aspect of the supra-vaginal portion of the cervix (Mackenrodt's ligaments), out to the lymph nodes in the obturator canal and along the internal iliac artery and from there upwards to the external iliac nodes, and along the common iliac chain to the aortic nodes. Also there is spread along the utero-sacral ligaments backwards on either side of the rectum to the region of the third piece of sacrum. Pain may be present for a considerable time before x-rays show the secondary growth in the sacral or lumbar vertebrae. In one case I waited nine months after the onset of pain before demonstrating by radiography a secondary in a lumbar vertebra. The type of carcinoma one likes to see is the one that comes to meet you as a proliferative growth down the vagina. Usually this type melts away with radium treatment whereas the ulcerative type is more resistant. Unfortunately, the ulcerative type is rather more common than the hypertrophic type. The cause of death in cases of cancer of the cervix is usually uraemia due to pyelonephritis or obstruction of the ureters. Occasionally cases die from intestinal obstruction. In the late stages there is a profound degree of anaemia and gross fatigue from intense bone pain. The intestinal obstruction and blockage of ureters is not necessarily always due to extension of growth but may result from fibrosis due to radiotherapy or surgical trauma.

Occasionally, carcinoma occurs in the stump of a cervix which has been left after sub-total hysterectomy.

A married woman aged 59 was referred to me by her doctor in September 1951. His letter was so good that I reproduce it in full: "This patient had a subtotal hysterectomy performed in 1939. She came to consult me about her blood pressure and happened to mention that at Christmas last she had seen a little blood P.V. and again once since. No loss of weight or bladder symptoms and no vaginal discharge. On examination I found a large fleshy mass growing from the cervix. It bled very easily and a piece of necrotic material broke away. No glands palpable. Her blood pressure was 160/100."

This woman had had a sub-total hysterectomy performed 10 years previously for uterine fibroids. Biopsy of a friable fragment from the cervix showed papilliform adenocarcinoma. The patient was given radium treatment and a fortnight later I performed a Wertheim hysterectomy. In so far as I could I excised the stump of the cervix and also performed pelvic lymphadenectomy. The pathologist's report was as follows:

"The excised cervical stump is infiltrated by glandular carcinoma which spreads upwards through two-thirds of its substance, and laterally into the vaginal vault: there is, however, a narrow belt of normal vaginal mucosa around it. Glands dissected out from the right and left iliac groups show only non-specific adenitis; those from the right and left obturator groups are heavily infiltrated with more anaplastic spheroidal-cell secondary growth." (Dr. A. Taylor.)

This patient made an uninterrupted recovery and doctors may recall seeing her at a recent clinical meeting. Three years later there is no evidence of recurrence and she is very fit and well.

It is said that radium therapy only gives a 25 per cent. five-year cure rate in stump cancer (Redman, 1952). Of course, the best treatment is to prevent it by performing total hysterectomy in the first instance. One hopes that in future the operation of sub-total hysterectomy will not be performed. Nowadays total hysterectomy carries no more risk than sub-total hysterectomy.

RECENT ADVANCES IN PATHOLOGY

The Americans have recently stressed the clinical stage " O " which they call *cancer in situ* or pre-clinical cancer. The best definition I know of this is that given by Hertig (1952):

" It would appear, therefore, on the basis of its incidence, age distribution, selective racial incidence, biologic behaviour, histologic appearance, and associated

exfoliative cytology, that carcinoma *in situ* is the preinvasive stage of squamous carcinoma of the cervix."

This condition is one for the pathologists to argue about when a biopsy is taken from a suspected cervix. In this connexion I would utter a word of warning.

A married woman, aged 36, who had a young child and was anxious for other children, was seen by a gynaecologist; he was a little worried about an erosion of her cervix and performed a biopsy. The report was "? *carcinoma in situ*" and upon this finding the poor woman had her uterus, tubes and ovaries removed. There had been some technical difficulty at the operation and ten days later she was found to be wet all the time. She had, in fact, a traumatic vesico-vaginal fistula and it was only at this stage that I saw her with a request to close her fistula. This was done with satisfactory healing and she is now well. I find it hard to believe that it was necessary to remove this uterus in the first place. The condition should have been watched and further biopsy performed at a later date.

A good deal has been done in America and a little in this country on the " screening " of gynaecological patients for carcinoma of the cervix and the body of the uterus by means of the examination of vaginal smears. This is highly specialized work and the technicians and pathologists have to be trained over a long time in order to recognize the type of cells exfoliated. Recently, it has been indicated that perhaps the cost of such investigations and the time involved does not justify their introduction as a routine measure.

TREATMENT

Until the end of the last century all that could be advised for women with carcinoma of the cervix was douching to relieve the vaginal discharge and hot cautery for proliferative masses. From 1900 onwards, after the introduction of Wertheim hysterectomy, attempts were made to remove the offending growth. The primary mortality of this operation even in the best hands was 14 per cent. and the incidence of ureteral fistual was 12 per cent. (Bonney 1941). Consequently, when radium treatment was introduced about 1920 it was found to be so much easier to carry out that there was a complete swing away from surgical treatment—except by Victor Bonney. He continued to practice Wertheim hysterectomy and was in a position a few years ago to review a series of 500 cases. Of these cases he claimed 159 alive after 5 years out of 300 in which lymphatic glands were not involved, and 42 alive after 5 years out of 200 where the lymphatic glands were involved. Bonney inclined to the view that lymphatic gland involvement doubled the operation risk and more than halved the ten-year cure rate (1949).

Until quite recently all cases have been treated with radium either in one large continuous dose (Paris method) or in divided doses (Stockholm method). When all cases are treated thus the overall five-year cure rate is about 35 per cent. Treatment of Stage I cases by radium will give a five-year cure rate in about 62 per cent. of the cases, perhaps even slightly more (Stockholm, 1954).

In the South-Western Region (1950) the five-year cure rate for Stage I is given as 41.1 per cent. This is a very poor figure and either the staging was inaccurate or treatment was not as efficient as it might have been.

RECENT ADVANCES IN TREATMENT

Even Stage I carcinoma of the cervix may already have microscopic involvement of the lymph nodes. This is stated to occur in about 20 per cent. of Stage I cases (Read, 1948). Recently, therefore, there has been a combined radium and surgery approach. Patients are given part of the full radium dosage and are then reviewed; if they are considered suitable cases Wertheim hysterectomy and pelvic lymphadenectomy are carried out a fortnight after the last radium treatment. If they are rejected for operative attack, the radium dosage is then completed. Modern conditions (better anaesthesia, blood transfusion, &c.) have made the operation a much less hazardous one. Several series of cases have already been reported; thus in Boston the operative mortality in 473 cases was 1.7 per cent. (Meigs, 1955), and in Leeds there were no deaths in 103 cases (Currie, 1952). Of

course, surgery will only be possible in about 20 per cent. of cases, i.e. those with no contra-indication to major surgery, in Stages I, II, and a few in Stage III. Biopsy indicating little response to radium will tend to extend the indication for Wertheim hysterectomy in a case that might otherwise be rejected (Glucksmann, 1949). In the period 1951–1954 I have performed surgery on 47 per cent. of the cases seen.

Extended surgical procedures for advanced cases have been introduced, particularly by Brunschwig in New York. The vagina, uterus, tubes, ovaries, related lymph nodes, and bladder may be removed, and the ureters implanted in the bowel (" North America " operation). The vagina, uterus, tubes, ovaries, related lymph nodes, and rectum can be removed, and a colostomy performed (" South America " operation). Total pelvic exenteration means the provison of a " wet " (urine) colostomy, and removal of rectum, bladder, vagina, uterus, tubes, ovaries and related lymph nodes. These are, in truth, extensive procedures, not to be undertaken lightly, and, indeed, the question may be posed, " Are they, in fact, worth while? "

High-voltage therapy is used mostly to attack the lymph nodes in inoperable cases, or in recurrences.

CANCER OF THE BODY

This cancer occurs in the cavity of the uterus or in the cornua (Fig. 1). In the cornua it may be missed on curettage. This adenocarcinoma of the uterine cavity is rarer than carcinoma of the cervix but it is the most important cause, after

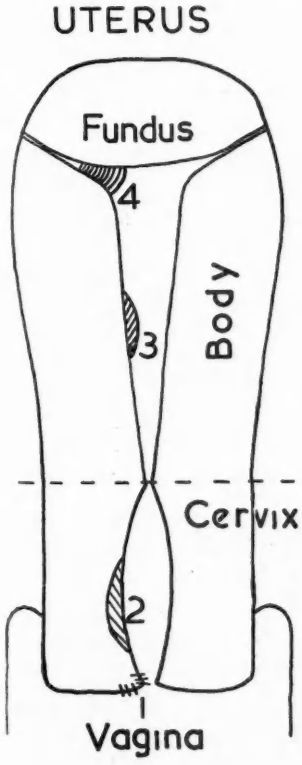

FIG. 1. *Showing the sites of cancer of the uterus*

Cancer of the cervix:

1. Squamous Epithelioma (common),
2. Adenocarcinoma (rare).

Cancer of the body:

3. Adenocarcinoma of the body,
4. Adenocarcinoma of cornua.

Cancer of the cervix (1, 2) is twice as common as cancer of the body (3, 4).

cancer of the cervix, of post-menopausal bleeding. It has been stated that if cancer of the cervix is the uterine cancer of the childbearing woman, cancer of the body is the uterine cancer of the nullipara, and its association with the diabetic woman is statistically significant (Way, 1954). It is comparatively rare before the age of 50 but I have seen it in a woman of 28.

It has been pointed out that the woman with menopausal menorrhagia is three and one half times more likely than the normal woman to develop cancer of the body of the uterus (Randall, 1946). Every case of menopausal menorrhagia must be curetted to exclude it. Indeed, every woman of 40 or over with menstrual irregularity must be curetted. This is a major argument apart from many others for hysterectomy rather than radium to procure the menopause. It is a Bristol graduate —Green-Armytage (1950)—who has urged the use of vaginal hysterectomy for menopausal menorrhagia.

CLINICAL FEATURES

The typical history is bleeding in a woman over 50 who has had no periods for a few years and who, although perhaps married, has never had any children. While post menopausal bleeding may be due to other causes it is most important to exclude cancer of the body before anything else. Let me emphasize once again the exclusion of this cause in every woman of 40 or over who has irregular menstruation. I have had one such case this year in a woman aged 47. If this had been ascribed to the menopause and no curettage performed this carcinoma would have been missed in its early stage.

On examination the uterus, tubes, ovaries and the cervix may appear absolutely normal in the case of a post-menopausal woman but when a speculum is passed blood may be seen coming through the external *os*.

PATHOLOGY

Cancer of the uterine body is a slow-growing adenocarcinoma, locally malignant. At first it slowly involves the uterine wall. It spreads to the ovaries along the lymphatics and then along the infundibulo-pelvic ligaments to the common iliac and the aortic lymph nodes. If the condition is untreated a secondary may develop in about two years' time at the introitus, and because of this and the supervention of secondary infection an inguinal adenitis may occur. After treatment by hysterectomy and bilateral salpingo-oöphorectomy a secondary may occur in the vault of the vagina (by implantation or by retrograde lymphatic spread), or secondaries may be found in the iliac and aortic nodes.

The growth may infiltrate through the uterine wall and directly involve the parametrium and omentum. On curettage carcinoma of the body is recognized because of its yellowish, friable, cheesy appearance. It is liable to undergo squamous metaplasia. So a differential diagnosis from cancer of the cervix may be difficult especially if the tumour is growing downwards to involve the cervix. The removal of a polyp must be accompanied by thorough curettage, as carcinoma of the body and a polypus may co-exist.

The significant association with diabetes is interesting. Often it is only when the patient comes into hospital with post-menopausal bleeding that the diabetes is recognized.

TREATMENT

Until quite recently if carcinoma of the body was found on curettage the uterus was packed and the cervix sutured and then bilateral salpingo-oöphorectomy and total hysterectomy carried out. With such treatment 70 per cent. of cases were alive at the end of five years. The response of this carcinoma to radium is not generally good even in early cases; and only Heymann in Stockholm has persisted in treating it entirely with radium. Recently, one radium treatment has been

employed in order to cause necrosis of the superficial growth and to " freeze " any lymphatics prior to surgery and with this treatment it is hoped to avoid the implantation of secondaries in the vault. Whether this will in fact improve the results remains to be seen.

High-voltage therapy is reserved for recurrences, or inoperable cases.

CANCER OF THE UTERUS—LATE STAGES

So often the general practitioner is left with a case at home which has either progressed too far for treatment or has recurred after treatment. If so he will perhaps be faced with a patient with incontinence of urine or faeces. Colostomy or transplantation of the ureters may be done as palliative measures. On the other hand he may have to treat a patient with severe bone pain which is worse at night and requires increasing dosage of morphia. Nowadays there are one or two long-acting morphia preparations for such cases, e.g. " Dromoran " (Roche). Some alleviation can be given by neurosurgeon or anaesthetist by injection of the involved nerve track with a long-acting local anaesthetic, e.g. " Proctocaine "; or the nerve may be destroyed at its root by intraspinal alcohol injection. These are palliative measures only but perhaps we can make fuller use of them. Blood transfusion for progressive anaemia will only delay the inevitable outcome.

And so to end. Our efforts, short of a cure for this dread disease, must be directed to prevention or at the worst to early recognition of it. Many of the extended surgical procedures and certainly of palliative surgery make me feel like Hamlet:

> " Yea, this solidity and compound mass,
> With tristful visage, as against the doom,
> Is thought-sick at the act." (Act III, Sc. iv.)

or again

> " But it reserv'd some quantity of choice
> To serve in such a difference."

I wish to record my thanks for the co-operation of my colleagues in the Radiotherapy Department, Dr. R. C. Tudway and Dr. S. Curwen, and Dr. A. L. Taylor (Pathology).

APPENDIX

University of Bristol Department of Obstetrics and Gynaecology

RESULTS 1951–1954

Total number of cases- 59
Cervix: 38
Body: 21

Cervix

Radium only	19
Radium—Wertheim Hysterectomy	17
One case died without treatment	1
Radium and later partial exenteration "North America" (died at operation)	1

Of 17 cases treated with radium and hysterectomy 7 had positive lymphatic nodes: 5 of these 7 cases are alive and well with no evidence of recurrence; 14 of the 17 cases survive and now have no evidence of recurrence. No case died as a result of Wertheim hysterectomy.

There were two cases of fistula: (*a*) vesico-vaginal (closed spontaneously); (*b*) uretero-vesico-vaginal (closed by surgery with re-implantation of ureter which is functioning satisfactorily).

Of the 19 cases treated by radium alone 10 survive, and of these 8 have no evidence of recurrence.

Body

14 treated with radium plus total hysterectomy and bilateral salpingo-oöphorectomy. (One died 5 days after operation of coronary disease—diabetic).
2 treated by total hysterectomy and bilateral salpingo-oöphorectomy.
3 treated with radium and H.V.T. (two now dead).
1 treated with radium and partial exenteration —"North America"—(died after eight months).
1 treated by total hysterectomy followed by H.V.T. (post-operative histological report of adenocarcinoma of polypoidal endometrium).
17 cases survive and none show evidence of recurrence so far.

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TELLING THE PUBLIC ABOUT MEDICINE*

BY

I. HARVEY FLACK, M.D.

The Editor of "Family Doctor"

Ever since there were doctors they have had to consider the problem of telling the public about medicine. For many centuries it was not really a big problem. Medicine was mostly magic. It was a mixture of Babylonian numerology, Arabian alchemy, medieval horoscopy and inspired water-divining, or uromancy.

The profession disagreed about a lot of things. Whether seven was a better number than fourteen. Whether bleeding the patient when the moon was waxing was more effective than leeching when the moon was on the wane. But on one thing they were united. Medicine was a mystery—and the more mysterious it could be kept the better. The idea of taking the public into their confidence simply never occurred to them. They were engaged in the practice of magic. And the most amateur magician knows that the effect of his tricks disappears if the audience knows how they are done. So for a long time the orthodox professional view in this country was very much in favour of keeping the public in the dark.

Obviously when medicine was compounded more of myths and magic than of sense and science there were good reasons for this attitude. But as medicine became more rational and more scientific, the reasons for telling the public and winning their confidence were strengthened, and the reasons for preserving the aura of mystery had less and less force.

Today things have changed greatly. As a profession we have a great deal to tell the public. We have a more literate and better-informed public that really does want to know. And we have many more means of telling them. These are three recent and important changes—in the people at large, in methods of communication, and in medicine itself.

BETTER-EDUCATED PUBLIC

Look first at the consumers of information, the ordinary people who create the demand for knowledge. They are better educated than ever before. The history of State education in England did not begin until 1832, but it has progressed rapidly. Today we are rather shocked when we learn that a mere 3 to 4 per cent. of Army recruits are "of very low literacy". These Army figures are not far removed from those of a survey of reading ability undertaken in 1948 by the Ministry of Education. The yardstick was the ability to read as well as the average child of seven. Examining fifteen-year-olds on this basis, 1·4 per cent. were found to be illiterate and 4·3 per cent. semi-literate.

In other words we have nowadays a population which is 95 per cent. literate. Taking the simplest definition, they really can read and if they don't read what we as doctors write about medicine and health, they will read what somebody else writes.

CHANGE IN THE PRESS

Now look at the change in the Press. The development of the popular press really took place in this present twentieth century. According to Herd (1952) the first news-book in this country was published on May 23rd, 1622. The first all-advertisement weekly was the *Publick Adviser* which appeared in 1657 and carried one of the earliest pieces of medical information ever to be seen in the public prints.

* B.M.A. Popular Lecture: Bristol, Wednesday, 24th November, 1954.

" In Bartholomew Lane on the backside of the Old Exchange, the drink called Coffee, (which is a very wholsom and physical drink, having many excellent vertues, closes the Orifice of the Stomack, fortifies the heat within, helpeth Digestion, quickneth the Spirits, maketh the heart lightsom, is good against Eye-sores, Coughs or Colds, Rhumes, Consumption, Head-ach, Dropsie, Gout, Scurvy, King's Evil and many others) is to be sold both in the morning and at three o'clock in the afternoon."

By 1711, according to a statement published by the Treasury, the total sales of all the papers then published amounted to 44,000 copies weekly, or $2\frac{1}{4}$ million copies in a year. Today the *Radio Times* and the *News of the World* both sell well over 8 million copies a week.

Almost exactly a hundred years ago *The Times* had a daily circulation of 60,000. And the second largest circulation, that of the *Morning Advertiser*, was only 6,600. Today *The Times* has a daily circulation around the quarter-million mark. There are now 5,723 newspapers and periodicals published regularly in the U.K., and for a big daily or a famous weekly a circulation of a million copies is a commonplace.

Broadcasting and television with their impact on millions of people are very much developments within our own lifetime. The pace of invention has speeded up greatly. So today there are more ways of telling people about medicine. There are more people who want to know, and who can read and understand. In this setting of increasing demand and improved and elaborate methods of communication, medicine has a great deal more to say for itself.

ADVANCES IN MEDICINE

I was a house-surgeon at the Manchester Royal Infirmary no more than twenty years ago. But let me give you a short-list of the developments since that time. We had no sulphonamides then. We had no penicillin, no antibiotics. Nobody had ever heard of radio-active isotopes. A blood transfusion was not a routine, but quite an event. Cardiac surgery was unknown and chest surgery was in its infancy. The tempo of scientific advance in medicine has quickened and accelerated right through this century. So let me stress again that we have more to tell, more people who want to know, and more and better means for telling them.

Now take the main question: What should we tell the public?

I think you can split up medical and health information into different levels. At the lowest level there is complete agreement in the profession. We all pay at least lip-service to health education. We want people to know about how the body works and why. We want them to know and profit by some of the nutritional knowledge gained over the last fifty years. There are all sorts of points about diet, exercise, fresh air, cleanliness, pasteurized milk, and moderation in, for example, the consumption of alcohol and tobacco, which we want people to learn. This is the basic level of what I would call pure health education, and it includes that instruction in the elements of biology and of human anatomy and physiology which is being taken up increasingly in the schools.

Now the next and more adult level of health education presupposes some of this knowledge and goes on to take a wide view of preventive medicine. It emphasizes the importance of clean food and of modern methods of inoculation and immunization. It includes, though not everybody approves of this, instruction on the early signs and symptoms of such diseases as cancer and tuberculosis.

Of course you can frighten people into cancerophobia. But if you conduct your education about cancer in the right way, and in the right setting you can only do good. I have yet to see any convincing evidence that the early detection of cancer has led to any increase in mortality.

Here there is some controversy but not all that much. Now take the next level of information and instruction and we come to what may be called the medical education of the public. This is the really controversial field. There are two questions here.

First. Should we instruct the public about new drugs, new treatments, new and old diseases?

Secondly. If we do so, then how far do we take the instruction and the argument?

I think the answer to the first question is simple enough. The public want to know about new drugs and new techniques. They love wonder-drugs and miracle cures. And if we don't take over the duty and responsibility of instruction—then someone else will.

You can really state the question in an alternative form. Is the public to receive responsible, authoritative and accurate instruction? Or is the instruction to be left to lay journalists, lay broadcasters—and the lunatic fringe of our own profession?

I feel that as a profession we have a real duty in this field. The days when medicine could be a mystery have long passed. For one thing we have too many intelligent laymen and laywomen inextricably mixed up with the most recent advances in medicine. Some recent figures are helpful. Today the Medical Research Council has a staff of 1,400. Of these 450 are " scientific staff " and only 159 of these are doctors. We need chemists and physicists and atomic scientists just as much as they need us. Whether we like it or not, we are treating a public which is better educated and better informed than was the case even twenty years ago.

Important, too, is the fact that we can use the demand for education about disease as one of the simplest and most acceptable modes of entry into the fields of health education. We must be realistic. We must accept the fact—however much some people may deplore it—that the public at large is not interested in health.

The few people who are passionately keen on pure health topics fall into two groups. There is a sane and converted group who are really interested in health education. There is a larger group of out-and-out cranks and faddists. They cling to nature cures or similar oddities and they buy the many magazines which are devoted to obscure " health cults ". I doubt if both groups add up to more than 1 per cent. of the population.

The ordinary man or woman in the street—the other 99 per cent.—is not interested in health. He or she is passionately interested in departures from health, in disease and its treatment. On any social occasion, nobody talks about health. Over the bridge table and in the intervals of canasta the talk is of my operation, my gynaecologist, my children's ailments. If, as a doctor, you go to a party you are never pestered by patients or potential patients only about health matters. What they want to know about is the latest and most fashionable disease, the new wonder drug, the latest operative miracle.

There is a real interest in disease and its treatment. And if you meet that interest and supply that demand for information, people will listen to you—or read what you write about it. They will go on listening to you—or go on reading—anything you may say or write in the same context which has to do with health education or preventive medicine in its widest sense. This I am sure is the most rewarding approach to the medical education of the public.

As a profession we must give them the information they seek about disease. We must take every opportunity while so doing to press home some of the relevant points about prevention, about early diagnosis, and about the accepted rules for healthy living. All this is the more important because on some of the problems of public health we have reached a point where we have most of the answers—and the public does not know them, or does not heed them.

DIPHTHERIA

From 1930 to 1940 we had about 58,000 cases of diphtheria and some 3,000 deaths every year in this country. The propaganda campaign on this subject started in 1941 and by 1942 was well under way. In 1949 the case mortality was much the same as it had been ten years before. But the total number of notifications was

1,890 and there were 84 deaths. The figures for 1953 show 266 cases and 23 deaths. Diphtheria is now a rare cause of death.

This was not a triumph for the laboratory workers or the clinics. Their triumph was years ago. This successful campaign was a triumph for public medical education. Sir Wilson Jameson directed the campaign and he used every available channel of communication. The B.B.C. played a part, so did all the newspapers and magazines, and you may recall the dramatic posters with one simple slogan " Diphtheria Costs Lives—Immunization Costs Nothing".

How much further are we going to get with the control of whooping-cough and of outbreaks of food-poisoning if we fail to regard them as exercises in the medical education of the public? Here again we have reached a point at which the application of the knowledge now available must depend on its being impressed on the public.

TUBERCULOSIS AND CANCER

Some similar considerations apply to tuberculosis and cancer. Early diagnosis is the key to each of these problems at the moment—the only key we have. How do we persuade the ordinary citizen of the importance of early diagnosis unless we give him all the information we can about early signs and symptoms and about the success of modern methods of treatment—provided they are applied at a sufficiently early stage? Here I would stress that the approach should be based upon hope rather than upon fear, and with the emphasis on curability.

Personally, I hold that we must undertake the medical education of the public. I would go further and say that this kind of medical education offers more hope of getting across health education than any other approach which is open to us.

Now look at the next question. How do we tell the public?

HOW TO TELL THE PUBLIC

Here I think the individual doctor, the individual general practitioner, is the right person to tackle one important part of the problem. The National Health Service has so far been preoccupied with curative medicine largely to the exclusion of the preventive side. Yet the general practitioner is in an especially favourable position to further this kind of health education, since the patient is consulting someone whom he already knows and trusts and whose advice he will readily accept. The fact that advice is given at a time of temporary ill health makes it all the more likely that it will leave a lasting impression.

Any patient just recovering from an illness is very keen to know about that illness and how he got it and why, and how to avoid it in future. This proposal, unlike so many others, does not call for any major alteration in the curriculum. It is rather an orientation throughout the curriculum. We have to say to medical students: This is your medical education—but you will have to convey parts of it to your patients. Can you do so?

Now conveying medical facts and opinions to a layman is not easy. He has no scientific background as a rule and no knowledge of much of the language we use daily. As against this we can assume that he reads the papers, looks at some magazines, listens to the B.B.C. and looks at television. So he may have learnt a little, and we can certainly learn from studying how these mass media present medical facts and opinions.

The B.B.C. does a fair amount of simple health education in its programmes for schools, and here too there are regular broadcasts on science and biology. In sound broadcasting there have been a number of outstanding feature programmes, produced as a rule by Nesta Pain. On television, Mrs. Mary Vyvyan Adams and Philip Miller-Jones were responsible for the series called " Matters of Life and Death ". They were fortunate in having the guidance of Sir Henry Dale and the co-operation of a number of distinguished medical men. Quite recently the television people spent an hour on electro-encephalography at Dr. Grey Walter's laboratories and put over a first-class documentary feature.

The B.B.C., whether on sound or television, is always mindful of the enormous public it reaches. In all its major features it has taken the approach I have emphasized. " Matters of Life and Death " ranged over a number of major diseases—which was what the public wanted, and emphasized the importance of early diagnosis, the possibility of cure, and where relevant the modes of prevention—which is the information that we want to get across as a profession.

THE PRESS

The daily newspapers and the large-circulation weekly magazines all take the same view. Health has no news value. Doctors and diseases and the ways they treat them are always in the news. You cannot pick up any newspaper on Friday without finding one, two, or three quotations from the *B.M.J.* and the *Lancet.* You can seldom pick up a paper on the 28th of any month without seeing *Family Doctor* widely quoted.

The main interest of the daily and Sunday papers is in medicine as news. And news is especially related to sex, crime, and dramatic operations. You can check this by searching your memory for the biggest medical stories of the last twelve months. They were concerned with Dr. Kinsey's latest work *Sexual Behaviour in the Human Female;* the Christie case; Professor Ian Aird and Baby Boko; and for full value on the operative approach to sex there was the story of Robert or Roberta Cowell.

Medicine makes news very frequently and that news is treated as such. But all the time the Press pays attention to doctors and to medicine and to medical features and stories. If you read critically the medical pieces in the dailies and weeklies you can learn a lot about the information that people want—and the way in which they want it served up. It would be pleasant if they could all reach and read the *B.M.J.* but they can't and they won't. They want a simplified version. They want interpretation.

DOCTORS WRITING FOR THE LAYMAN

I think every doctor has a part to play in telling the public about medicine and especially the individual patient. But there is a special need for doctors who can write medical articles readably. There are very few doctors indeed who can write in a style acceptable to the public at large. Why that should be so I do not know—but it is so.

There are, of course, very real difficulties in presentation. In the modern world there is a fabulous proliferation of experts and specialists. In medicine and indeed in every other subject they are all addicted to jargon. It is all highly technical, highly scientific and regrettably obscurantist. The message may be admirable but it usually squelches along in a bog of jargon which might have been devised to achieve the maximum of words and the minimum of intelligibility.

Let us assume that the experts can communicate with each other, with a certain amount of semantic confusion it is true. But nothing that cannot be remedied by a couple of dozen letters in the Correspondence Columns of the *B.M.J.* and the *Lancet.* Now ask them to communicate with the ordinary layman. And mostly they cannot. They may try a turgid stilted writing-down style. But nobody—except an editor whose duty it is—would ever read it.

The prime error of the expert writing down is in his judgment of his audience. It is all too easy to go on using jargon which is then clumsily defined by other words which again are jargon. This criticism of the experts applies particularly when they try to write for a mass audience. The expert tends to assume what he regards as a basic level of education. His base, and he is leaning over backwards and contorting his own language to get down to that level, is still way above the heads of his audience.

Let me give you a classic example of this difficulty of communicating with a non-expert audience. It is taken from the annals of Proctor and Gamble, the

largest makers of soaps and detergents in America. (*Time* 5th October, 1953, pp. 38–42) They have a big market research organization and they tested out on a very large sample of women the effect of some of their advertising.

They had in mind the use of the traditional prescription symbol—the ℞ for recipe or the invocation to the sun-god Ra. It is a symbol that is used very frequently in advertising because it suggests that the doctor has ordered it and therefore it must be good. They found that 40 per cent. of the women they interviewed had no idea what it meant. For them it had no meaning.

Then they were going to use the word " concentrated " in an advertisement. They tried that out and found that many housewives thought that it meant " blessed by the Pope ".

There are very few lay words which are not open to this kind of misinterpretation. That is why we have technical words. Yet in writing about health and about medicine it is essential to avoid technical jargon and it is not easy to choose words which can be understood, which are accurate, and which will bear only one meaning.

It is very salutary to take a letter in the *B.M.J.* or the *Lancet* and convert it into what one might call, without disrespect, *Daily Mirror* English. The *Mirror* is a readable paper and immensely popular. It has flourished on a series of very simple policy decisions. One of the important ones is to write it so that everybody can understand it and so that there can be no mistake about the meaning.

It is very difficult to simplify medical facts and opinions and preserve accuracy and authority at that particular level of clarity. But it can be done. I do not suggest that the *Mirror* style is ideal. But it does suit a readership of well over four million people. There will be more patients in the *Mirror* readership than in *The Times* group. And the same arguments apply to the *Express*, the *Mail*, the *Herald* and the *News Chronicle*. They are bought and read by millions. They all present facts and opinions at a level, and in terms, which suit millions of people.

FAMILY DOCTOR

Family Doctor is well above the *Mirror* level of presentation but is deliberately written and presented to appeal to a broader section of the community than *The Times*. By and large it has the support of the profession and in it we aim at presenting readably, yet accurately and authoritatively, the information people want about health and disease, and about all those medical matters which are of absorbing interest to the public.

Looking ahead, I would put it like this. As a profession we can no longer neglect the public demand for information about our work. If we meet that demand we shall have better informed and more co-operative patients with a greater awareness of what we are trying to do for them. But in order to meet it we need an emphasis on telling the public right through all our medical teaching. We also need many more doctors with a special skill in writing and talking and lecturing and broadcasting about medicine.

To carry out this work effectively we will need to look again at our ethical rules, which have varied hardly at all in a time full of changes in every other direction. I think we need also to look more scientifically at our means and methods of medical and health education for the public. We ought to apply to them some of the yardsticks developed by social scientists and by the social-survey people.

As a profession we are only just moving into the field. *Family Doctor* is the first attempt in this direction by the profession as a whole. It is a bold experiment and I believe an important one. We are trying to get across facts about health, about medicine, and about doctors. They have to be presented so attractively that people will buy the B.M.A.'s popular health magazine in preference to all the hundreds of other magazines displayed on the bookstalls.

We have learnt a lot in the years since *Family Doctor* was launched in April 1951. We have a great deal more to learn. But one thing has become apparent. Every week we receive hundreds of letters from the readers of *Family Doctor*. By now I

must have read literally thousands and thousands of them. And from them I have learnt this.

All over this country there are men and women, ordinary pleasant intelligent people, who want to know more and more about medicine. They want to know about the care of babies and toddlers, about the care of sickness in the home, about the special care of old people. They want to know a great deal about individual diseases and disorders that have afflicted themselves or their relatives or their families.

This is not a morbid or deplorable curiosity. It is a natural and human wish for more knowledge about something that concerns them closely. In my view this is a wish that we should meet. A need for knowledge that as a profession we should supply.

CALEB PARRY OF BATH

The bi-centenary of a great West Country physician

BY

JOHN APLEY

Consultant Paediatrician Bristol Children's Hospital and Royal United Hospital, Bath

Nobody, so far as I know, has collated and set down the achievements of physicians from the West Country, though they form a galaxy as bright as any. Our only claim to some of these great men is that they were born in this part of England; but it was in the West Country that others, and not the least distinguished, practised, pioneered and made their names.

The best known is surely Edward Jenner (1749–1823),* of vaccination fame, who was born and later practised in Gloucester. Believing what a milkmaid told him, he transmuted a local bucolic tradition into a universal scientific principle. Less known, and perhaps more of a Pandora's box, is his early description and discussion of allergy. Jenner's *An Inquiry into the Causes and Effects of the Variolae Vaccinae* was dedicated to " C. H. Parry, M.D., at Bath, My Dear Friend ", who is the main subject of this essay; but, before turning to him, a few other brilliant names may scintillate before us for a moment.

In Bristol was born Richard Bright (1789–1858) who became one of " The great men of Guy's ". He sprang to fame with his epoch-making distinction between cardiac and renal dropsy. " Bright could not theorize," said Wilks " but he could see "; and we read with admiration of the many and varied conditions he observed, often before anybody else. They include pancreatic diabetes, pancreatic steatorrhoea, acute yellow atrophy of the liver, cerebral hemiplegia, echinococci in hydatid cysts and cardiac murmurs in chorea. A little before Bright's time was Thomas Baynton (1761–1830), a Bristol surgeon, the first to treat spinal caries by absolute rest in the horizontal position. Francis Glisson (1597–1677) was born in Rampisham in Dorset; his name is best known for " Glisson's Capsule " of the liver, but his great achievement was the first full account of rickets in infants. Two Cornishmen were Richard Lower (1631–91), the first to perform direct transfusion of blood from one animal to another, and John Mayow (1643–79), a genius of physiology. In his short life he conceived the idea, and demonstrated by experiments, that the object of breathing is to produce an interchange of gases between the air and the blood, shown by corresponding changes in the colour of the blood from dark to bright red. This antechronistic idea was conceived before Lavoisier, in 1789, had demonstrated that the respiration of living organisms involves oxygen. Among Devon men there were James Yonge (1646–1721), surgeon to the naval hospital at Plymouth, whose book extolling the virtues of turpentine, especially in the control of haemorrhage, can be seen in Bristol University Medical Library; John Huxham (1692–1768) of Totnes, the first to observe palatal paralysis in diphtheria; and Sir George Baker (1722–1809), who antagonized his fellow Devonians by (correctly) attributing Devon " cider-time colic " to lead. And at Exeter was John Sheldon (1752–1808), who lectured under the renowned William Hunter in London, followed him as professor of anatomy at the Royal Academy, and eventually came as surgeon from the Westminster Hospital to the Devon and Exeter Hospital, where his portrait hangs now. As Mr. Norman Capener has told us, " Sheldon's interests in embalming, lymphatics, whaling and ballooning make up a story of great fascination that

* Not to be confused with Sir William Jenner (1815–1898), physician to Queen Victoria, who helped differentiate typhus and typhoid, one of whose sons, Colonel L. C. D. Jenner, died only two years ago at 9 Circus, Bath.

must remain for another occasion", and we must hope that Mr. Capener will record it for our further enjoyment. The name of Thomas Willis (1621–75), son of a Wiltshire farmer, is remembered by the "Circle of Willis"; but his was also the first description of myasthenia gravis, and his the original observation of the sweet taste of diabetic urine.

Eminent among West Country physicians, many of whom we must pass by in the Hall of Fame, is Caleb Hillier Parry (1755–1822). Sixteen years after Jenner had dedicated his now classic work on vaccination to Parry, the compliment was returned when Parry dedicated a work on tetanus and rabies to Jenner, his "dear and oldest friend". The friendship between these two great men, which was to continue throughout their lives, had commenced when they attended the same school in Cirencester, the town in which Parry was born. But Parry's name is associated with the City of Bath, to which he moved in 1779 with his bride, and from which he hardly travelled during the remaining forty years of his life. Shortly after settling in Bath Parry became physician to the Casualty Hospital which was merged with the City Infirmary in 1826; they formed the United Hospital,* whose first physician was Parry's eldest son. Parry later became physician also to the Bath General Hospital, now so widely known as the Royal Mineral Water Hospital.

In Bath, Parry lived first at 13 Catherine Place. From there he moved round the corner to 27 Circus, in a centre so preponderantly medical now that, like the Harley Street area in London, it is referred to by taxi-drivers as "The Pill Box". The last years of his life were spent, still actively concerned with research—by now he was carrying out vivisection on sheep—in a house which he had built on Sion Hill.†

Before settling in Bath, Parry, blossoming early, had enjoyed a most distinguished career as a student in Edinburgh. Indeed, under his presidency the Students' Society obtained the still unique distinction for a students' body of a royal charter. Since Parry's day the migration south from Edinburgh to Bath has been repeated by many able doctors.

Parry is justly credited with the earliest recognition of exophthalmic goitre: he described eight cases, under the title *Enlargement of the Thyroid Gland in connection with Enlargement or Palpitation of the Heart*. In *An Introduction to the History of Medicine* (1929) Garrison rightly affirms that this account of exophthalmic goitre was "so complete and original that it more justly entitled him to the honour of its discovery than either Flajani (1800), Graves (1835), or Basedow (1840)". Parry's story and achievements have been delightfully sketched by Sir Humphry Rolleston in the *Annals of Medical History* (1925); but his claim to fame was first spread through the great Osler's advocacy, and exophthalmic goitre was dubbed "Parry's disease" in Osler's *Principles and Practice of Medicine*. To Parry have also been ascribed the first descriptions of congenital megacolon (some sixty or more years before Hirschsprung's description in 1888), facial hemiatrophy, and what is now sometimes termed "histaminic cephalgia". So painstaking and meticulous were his notes that, in *Collections from the unpublished Medical Writings*, edited by Parry's son, descriptions of many previously unrecorded disorders can be recognized. Parry was careful to record observations on his cases on the day they were made. Moreover, he "eagerly availed" himself of "dissection" of the body after death, and his autopsy records read as lucidly as his clinical notes.

Some of his descriptions can serve as models today. Thus: "A physician, of fair complexion, large, fat and of a full habit, at twenty-two became extremely dyspeptic ... was obliged to leave off fermented liquors." Again, "William B., aged three, had last summer the natural small-pox in a very violent degree, but recovered and

* Mr. Charles Kindersley, doyen of the hospital at the present time, reminds me that in the reign of Queen Victoria the title *Royal* was added and, as far as proved possible, each of the wards was named after one of the royal children.

† In *Georgian Buildings of Bath* Walter Ison notes that the famous John Eveleigh charged twenty guineas for designing and supervising the building, which unfortunately no longer exists.

has enjoyed good health till about four months ago, when he began to complain of a pain in the belly; and had sickness and vomiting, which occurred only in the morning, just after he rose from his bed at six or seven o'clock. Two months ago he had a stiff neck, with giddiness, strabismus, and occasional headache." From his crisp words the workings of Parry's mind can be seen crystal clear. Thus, under the heading "*Squinting cured*": "Master S., aged one year, . . . was perceived, after a violent fit of crying, to squint with the left eye, which turned preternaturally inwards . . . . I recommended that the eye which was well should be constantly covered during the day . . . . His eye regained its proper power, which . . . it continues to possess." Nor is Parry fearful of criticism: "The most dangerous state . . . human mind is a calm acquiescence in the accuracy and extent of its own attainments." He did not shrink from attacking the famous figures of the day if he conceived that they were in error: "When John Hunter speaks of the blood coagulating by the stimulus of necessity, he mistakes the final cause for the . . . means."

The talents of this remarkable man, like those of so many doctors of that period, were by no means canalized in medical channels. He was a Fellow of the Royal Society, became a member of the Society of Natural History of Göttingen, and was made an honorary member of the Farming Society of Ireland for his services to the wool industry. His wide extra-medical interests are shown also by the stimulating variety of his publications and addresses. He wrote several papers in the *Farmers Journal*; lectured on many occasions to the West of England Society of Agriculture, Arts, Manufactures and Commerce; and his published dissertations embrace fossils, wool production, and sheep breeding.

In the medical library of Bristol University reposes a collection of over 900 books, "The Parry Library", lately transferred from its original home in Bath. It includes the "Parry Collections", edited by his son and printed in 1825; the remaining books forming a varied and, indeed, rather odd miscellany of medical and near-medical matters. As might be expected, from a city which now bears with a railway station flaunting the ovine-sounding title "Bath Spa", some are on the subject of "the waters". There is the *Narrative of the efficacy of Bath waters in various kinds of paralytic disorders;* and *Bath Memoirs, or Observations in three and forty years' practice at the Bath: what cures have been there wrought* (1697). There are commentaries, not only on spa waters, but on vapour bathing and sea water. One finds medical books in Greek, Latin, French and German as well as many translations; and there is a book, written in 1646, on Egyptian medicine and Indian medicine. There are many old books on anatomy, some most beautifully engraved, and on surgery "proper not only for the improvement of all young surgeons, but also for the direction of such as are further advanced". An "Account of a child with a double head" set me searching, with the possibility of writing to Professor Ian Aird before me, until I found that the drawings had been done in 1790 and as far from home as Bengal. Not all is materialistic, however, and I draw attention to *A theologico-philosophical dissertation concerning worms in all parts of human bodies* (1727), and *A dissertation on the influence of the passions upon disorders of the body* (1788), though I failed to find the word *psychosomatic* therein. Even for Distinction Awards there is a possible precursor in the *Debates in Parliament respecting the Jennerian discovery, including the late debate on the further grant of twenty thousand pounds to Dr. Jenner.*

Mr. A. E. S. Roberts, of the University Medical Library, who has courteously provided some references and items of interest for this essay, draws my attention to the curious paucity of Parry's own signatures in the books of the Parry Library. Probably we shall never discover a reason for this extraordinary omission; for in our day the Parry Library and the man who inspired it are regrettably neglected. We are rich but forgetful heirs to many great physicians who practised before us in this fruitful corner of our land. Were we to contribute further accounts of their lives and times, and old and interesting medical books, we might set growing again the Parry Library—to the glory of Caleb Hillier Parry and English Medicine itself.

PRIMARY MYELOSCLEROSIS WITH LEUCO-ERYTHROBLASTIC ANAEMIA

A Clinical Pathological Conference of the University of Bristol Medical School on 16th November, 1954

CHAIRMAN: DR. O. C. LLOYD

Dr. O. C. Lloyd: The case tonight is that of a man of 74, a retired solicitor's clerk. His general practitioner was Dr. P. N. Heron, who is unable to be present tonight but he has written me a letter, in which he says that although the man was a patient of his for almost ten years, he saw him hardly at all. He did, however, see him in 1946 or 1947 and at that time he refused to have anything done and would not go to out-patients or have any private opinion. His attitude was " I don't care if it kills me as long as there is no pain". Then early in 1954 he got acute abdominal pain for which Dr. Heron sent him to the Bristol Royal Infirmary, as a possible case of acute intestinal obstruction. " I don't suppose I was so much worried," Dr. Heron wrote, " about the pain as the fact that this was a good opportunity to get this stubborn man into hospital for investigation. However he had me beat and walked out the next day. I saw him a few times in the last two or three months of his life. Always he absolutely refused to go into hospital. It was only during this time that he complained of cough which annoyed him and an obvious increasing weakness but no pain. In the end he was sent to hospital almost in a dying state, because he could no longer get out of bed and his daughter and relatives more or less forced him to go."

He was first admitted with acute abdominal pain on 27th January, 1954, and was under the care of Mr. Cooke, who cannot remember anything about him as he was only in hospital for one day. He was readmitted on 15th August, 1954, and this time he was under Dr. Cates, who will give the main points of the story.

Dr. J. E. Cates: This man was admitted as an emergency because he was cachectic and obviously about to die. He was very wasted and profoundly anaemic; he had difficulty in passing water and was complaining of a lump in his abdomen. The history obtained at the time was that ten years previously he had himself noticed the lump. Four years before he came in, he began to feel easily tired and began getting thinner and pale. You have already heard how eight months previously he had been admitted with sudden left-sided abdominal pain, so severe and sharp, that he was thought to have an abdominal emergency, possibly intestinal obstruction. He was at once found to have a very large spleen. A blood count showed that he had a lot of primitive cells in his peripheral blood and his haemoglobin was only 66 per cent. He was thought to have myeloid leukaemia. He went home before full investigations could be made and slowly got worse. He became even paler and thinner and three weeks before readmission he had pain in the legs, collapsed and took to his bed. For the last two weeks before admission he was in bed all the time. On admission he was very thin and frail, and so weak that he could hardly move his arms and had to be fed. He was ghastly pale with a cough and had difficulty in breathing. The main physical signs were that he had a very large spleen which came right down into the left iliac fossa and a large liver, about five fingers' breadth below the right costal margin. There were no signs of leukaemia other than the large spleen and liver; there were no enlarged lymph nodes; his gums were not swollen or infected and there was no sore throat. At the time the diagnosis still seemed to be myeloid leukaemia and relevant investigations were put in hand. The haemoglobin was 22 per cent.; the red cells were not counted but the appearance of the blood film was that of hypochromic anaemia. There were many nucleated cells. The total white cells were 40,000 per cu. mm. of which 30,000 were polymorphs. There

were a few myeloblasts and normoblasts and immature cells of all series were seen in the blood film, which meant that he had a leuco-erythroblastic anaemia. The blood films made in January 1954 were re-examined and were found to support this diagnosis, since they also showed primitive red and white cells. So we had another look at the patient. Here was a man who was very anaemic with probable leuco-erythroblastic anaemia: what could be the cause of it? The pathologists tell us that primitive red and white cells appear in the peripheral blood when the bone marrow is stimulated and invaded by disease, such as secondary carcinoma, Hodgkin's disease or rare bone diseases; also myelosclerosis—a disease in which there is obliteration of bone marrow by fibrous tissue. What could the cause be in this case? He had had some difficulty in passing water and his prostate was found to be hard and craggy and enlarged: we therefore thought it most likely that the disease of the bone marrow was infiltration by secondaries from a primary cancer of the prostate. We did not X-ray his bones as he was too ill. A bone marrow biopsy was done but there were no cancer cells present. On this rather thin presumptive diagnosis we put him on stilboestrol. He refused to have any blood transfusions or " mucking around ". He became more oedematous, he had a bedsore, and became weaker and drowsier and eventually died thirteen days after admission. Before the post-mortem was done the feeling was that this was a man with leuco-erythroblastic anaemia, due probably to carcinoma of the prostate. But he had had a big spleen for a long time and an attack of perisplenitis, presumably, eight months before. One would not expect this with fairly recent onset of infiltration of bone marrow; and these two things, clinically, we could not put together.

Dr. R. Moyle showed some X-rays: In the chest X-ray no deposits were seen in the lungs, mediastinum or ribs. An X-ray of the right humerus showed that a portion was decidedly sclerotic and in the femur the trabeculae were very much coarsened and roughened, with a translucent area.

Dr. Lloyd asked Dr. Johnson to tell the meeting about the haematological investigations.

Dr. D. H. Johnson: I first saw a blood film in January 1954 when the total nucleated cell count was 32,000 per cu. mm., mainly polymorphs with myelocytes and more primitive forms present. Although this initially suggested leukaemia a difficulty arose because nucleated red cells were also present in moderate numbers. Myeloid leukaemia, however, especially in its terminal stages does occasionally produce a leuco-erythroblastic picture. I went to see the patient immediately only to find he had discharged himself. He came in again in August and I saw another blood film. The anaemia was more severe, the nucleated white cell count was about the same and the number of primitive white cells and nucleated red cells had increased. With the fuller history now available this appeared to be a true leuco-erythroblastosis: leukaemia no longer suggested itself. From the sternum I obtained a very poorly cellular aspirate with no abnormal cells. As this might not have been a representative sample, I repeated the marrow aspiration at the iliac crest and obtained a similar sample. This tended to confirm the suspicion of generalized fibrosis of the marrow with enlargement of liver and spleen through displacement of haemopoietic activity to these organs. If haemopoiesis is going on outside the marrow, primitive red and white cell precursors can no longer be held back and they appear in large numbers in the peripheral blood. The commonest causes of displacement of the marrow are carcinomatosis and myelosclerosis. Failure to find carcinoma cells did not rule out metastases from carcinoma of the prostate since these may produce an extreme degree of fibrosis with very scanty cells.

Mr. R. V. Cooke: Who described the prostate as craggy?

Dr. Cates: I did. It was hard and irregular and highly suspicious of carcinoma of the prostate: it was a tentative clinical diagnosis.

Question: Was any laboratory test done to support this diagnosis of the carcinoma?

Dr. Cates: Yes—a serum acid phosphatase was 5 units.

Question: What do you consider to be a diagnostic level?

Dr. G. K. McGowan: A serum acid phosphatase over 10 units is almost certainly diagnostic of prostatic carcinoma.

Mr. Cooke: How often do you find that in carcinoma of the prostate?

Dr. McGowan: I do not know: it is my impression that not more than one-third of the true carcinomas of the prostate have a diagnostically raised acid phosphatase.

Dr. Lloyd: Would it not be true to say that when the carcinoma has already metastasized the proportion of the cases then which show a raised acid phosphatase is very much higher?

Dr. McGowan: Yes, but this does not necessarily follow, of course, in each individual case.

Question: How common is leuco-erythroblastic anaemia?

Dr. Johnson: It is slightly more common than leukaemia. The presence of a few myelocytes and an occasional red cell in the blood film from a patient who is known to have, say, carcinoma of the bronchus, is strong evidence that there are in fact secondary deposits in the bone and that any operation is likely to prove only palliative. This is not an infrequent finding in proved cases of carcinoma. It is important to be on the look out for them because of their prognostic significance.

Dr. Lloyd (presenting the post-mortem findings):

This man was very much wasted with bedsores over the sacrum, heel and right hip. The pleural cavities were obliterated by fibrous adhesions and there was also slight interlobular fibrosis in the lungs. The abdomen showed extensive fibrous adhesions between the spleen, the omentum and the abdominal wall. They probably represented the healing lesions of the perisplenitis which had caused him the acute abdominal pain.

The heart was enlarged and weighed 385 grammes, the enlargement being mainly due to well-marked dilatation of all the chambers; this dilatation was so great that I was unable to observe any very obvious thickening of the heart muscle itself. There was some white adherent thrombus in the right auricle. I could not see any myocardial pallor attributable to fatty infiltration, but I have no doubt that this heart was dilated and acted poorly because of the long standing severe anaemia.

The lungs showed chronic vesicular emphysema, and severe pulmonary oedema, which was probably terminal and due to heart failure. No metastases of any sort were found in the lumgs.

The spleen was greatly enlarged, weighing 1,640 grammes, and there was well marked perisplenitic fibrosis. It was tough and the cut surface showed a blotchy appearance from areas of cellular hyperplasia congested with blood.

The bones showed well-marked hyperostosis of the medullary trabeculae; even in the shaft of the femur, where the marrow is usually soft, it was ossified. Lilac-coloured marrow extended the full length of the shaft. On microscopy there was fibrosis of the marrow with formation of osteophytes on the inner aspect of the cortex and on the medullary trabeculae (Plates I and II).

The liver weighed 2,480 grammes, which is nearly double the normal figure, and histologically showed obvious foci of myelopoiesis in its sinusoids. The red and white cell precursors tended to be aggregated in separate groups.

The prostate was enlarged and firm, but did not have a nodular pattern. There was no naked-eye infiltration of the capsule, but a section (Plate III) showed that it was in fact invaded by a well-differentiated adenocarcinoma. In spite of this no metastases were found in any organ of the body.

In this case, therefore, there were two unrelated conditions. The man probably had leuco-erythroblastic anaemia due to sclerosis of the bone marrow for a long time. The fact that he had a carcinoma of the prostate had made the diagnosis difficult. The disease was a primary myelosclerosis with leuco-erythroblastic anaemia and enlargement of the spleen.

Myelosclerosis might be due to secondary carcinoma or reticulosarcoma: primary sclerosis is much more rare and this is the first case we have had in the post-mortem room.

Dr. Cates: The puzzle about leuco-erythroblastic anaemia is the anaemia; because even with complete replacement of bone marrow there should still be enough haemopoietic tissue, since the liver is enlarged down to the umbilicus and the spleen down to the left iliac fossa. It is said that the spleen becomes the site of red cell formation because the bone marrow is replaced by fibrous tissue, and that therefore it should never be removed in cases of myelosclerosis. There is some evidence that this theory is wrong.

Dr. Lloyd: Some people have questioned it and claim that the patient is better when the spleen is removed. Perhaps Dr. Cosh will give us his views on the matter.

Dr. J. A. Cosh: I recently saw a case demonstrated at the Johns Hopkins Hospital in whom splenectomy had been performed in the presence of myelosclerosis. They called it " agnogenic myeloid metaplasia " which I discovered to be a phrase meaning myelosclerosis with leuco-erythroblastic anaemia of unknown cause. The theory was that some function of the spleen had depressed haematopoiesis in the marrow, and it was felt that compensatory haematopoiesis in the spleen was relatively unimportant. The offending organ, namely the spleen, was therefore removed, and six weeks later the patient was doing well and the blood count was improving.

Question: What is known about the mechanism of the bone marrow for holding on to immature cells?

Dr. F. J. W. Lewis: One view that has been expressed is that very immature cells tend to stick together and not move into the peripheral blood.

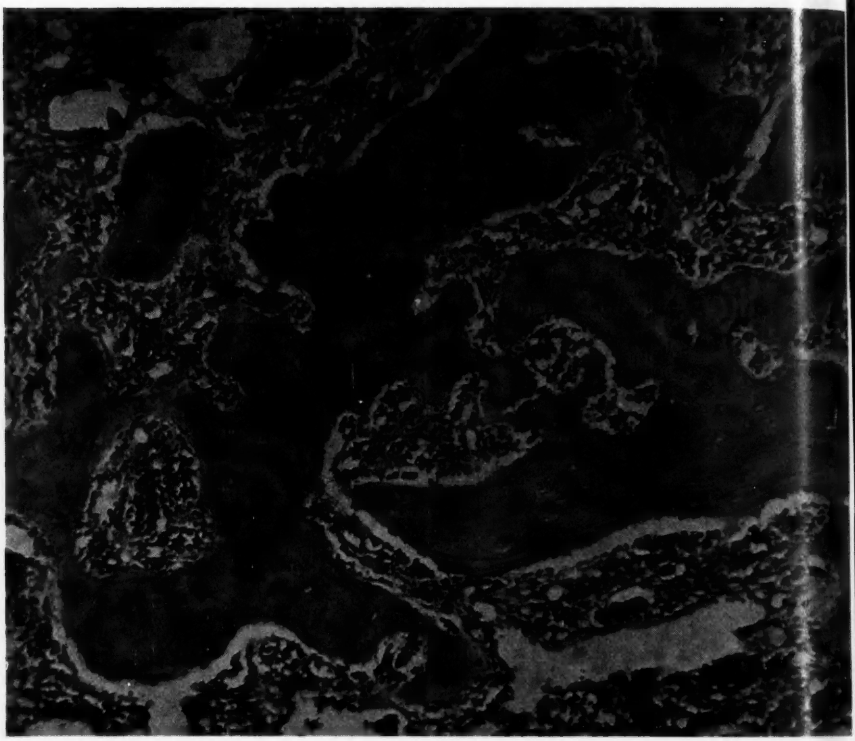
Dr. Lloyd then asked Mr. Cooke if he had any experience of removing spleens in these cases.

Mr. Cooke: Splenectomy can be a hazardous operation and I would have to be convinced that it would be really helpful, or that the spleen was doing secondary harm before you would make me do it. I remember some time ago a very capable surgeon showing a case like this the day before he was going to operate and I remember saying to myself, " This is an oldish lady and if she comes to any harm I shall feel something wrong has been done." We saw the operation and by the time I left the theatre there was blood everywhere, three limbs were being used for intra-arterial transfusion and there was a " dead body " on the table. I think if you are talking about splenectomy you have to think twice before operating: I have no personal experience of doing it for this particular condition.

PLATE I

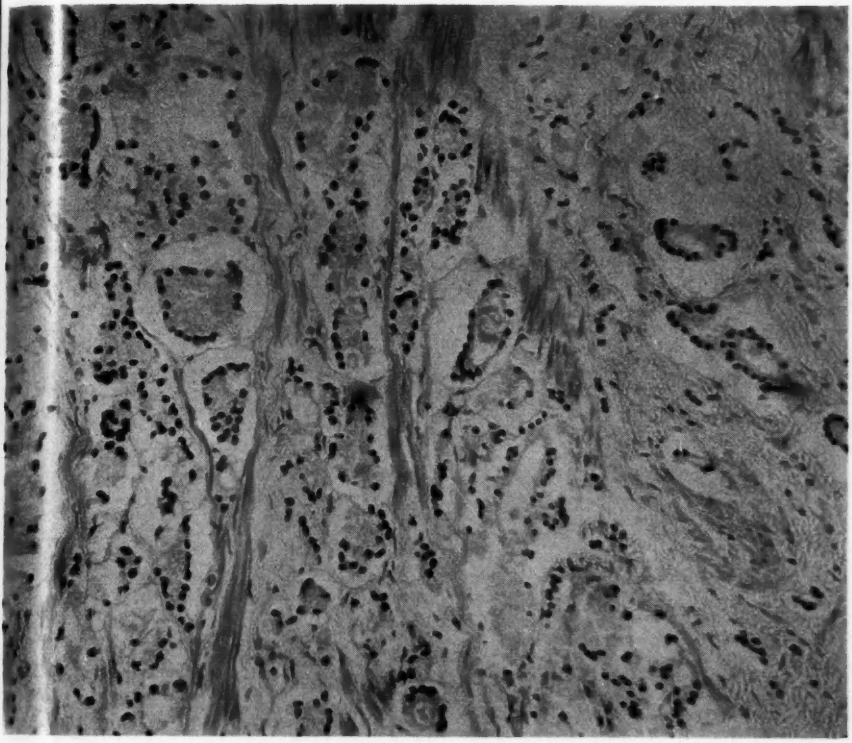
Sternum, inner aspect of cortex. The arrows show a "reversal line". This is a cement line which marks the inner limit of the normal cortex. The arborizing osteophytes attached to it are due to myelosclerosis, and the fibrous tissue out of which they are formed can be seen to the right of centre (× 110).

PLATE II



Sternum, medullary trabeculae. These are coarse and thick (× 110).

PLATE III



Prostate. *A well-differentiated adenocarcinoma with small acini is seen invading the parallel fibres of collagen and smooth muscle which form the capsule of the gland* (× 200).

Appointments

UNITED BRISTOL HOSPITALS

Name	*Appointment*	*Formerly*
FREEMAN, J., M.B., B.S. (LOND.), F.R.C.S. (ENG.)	Consultant Surgeon (E.N.T.).	Senior Registrar (E.N.T.) United Bristol Hospitals.

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MILLS, C. P., M.B., B.S. (LOND.), F.R.C.S. (ENG.).	Senior Registrar (E.N.T.).	Registrar (E.N.T.).
WILLIAMS, R. A., M.B., B.CHIR., D.L.O.	Registrar (E.N.T.).	S.H.O. (E.N.T.), Westminster Hospital.
WESLEY-JAMES, O., M.B., B.S. (LOND.).	Registrar (Casualty and General Surgery).	Surgical Registrar, University College Hospital, Ibadan.
VERO, D., L.D.S., R.C.S. (ENG.).	Registrar Dental Surgery.	In charge of "English Electric" Dental Clinic, Stafford.

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VARMA, R. M., M.B., B.S. (MADRAS), PRIMARY F.R.C.S. (EDIN.) AND (ENG.).	Registrar to the Department of Neurological Surgery, Frenchay Hospital.	Surgical Registrar, Royal Cornwall Infirmary, Truro.
SEAGER, C. P., B.SC. (WALES), M.B., B.CH. (WALES), D.P.M. (CONJOINT).	Senior Registrar in Psychiatry, Bristol Mental Hospitals.	Psychiatric Registrar, Belmont Hospital, Sutton, Surrey.
THOMSON, J. L. G., M.B., B.S. (LOND.), D.M.R.D., M.D. (LOND.), M.R.C.P. (LOND.).	Consultant Radiologist to the Bristol Clinical Area (Frenchay Hospital).	Senior Registrar in Radiodiagnosis, United Oxford Hospitals.

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ELRICK, W. L., M.B., B.S. (MELBOURNE), PRIMARY F.R.A.C.S.	Surgical Registrar, Cheltenham General, Eye and Children's Hospital.	Undertaking Final Fellowship course at Guy's Hospital.
MERRYWEATHER, R., M.B., B.S. (LOND.), F.R.C.S. (ENG.).	Consultant Orthopaedic Surgeon, North Gloucestershire Clinical Area.	Senior Orthopaedic Registrar, Exeter Clinical Area.
MANDELBROTE, B., M.B., CH.B. (CAPE TOWN), M.R.C.P. (LOND.), D.P.M. (CONJOINT).	Medical Superintendent, Horton Road and Coney Hill Hospitals, Gloucester.	Assistant Psychiatrist, Warlingham Park Hospital.

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HABIB, G. G., B.SC. (B'HAM), M.B., CH.B. (B'HAM.).	Medical Registrar to the Bath Group of Hospitals.	Senior House Officer in Clinical Pathology, St. George's Hospital, London.

SOUTH SOMERSET

Name	*Appointment*	*Formerly*
GRAHAM, A. J., M.B., CH.B. (ABERDEEN), D.P.M. (CONJOINT).	Senior Registrar in Psychiatry, Tone Vale Hospital, near Taunton.	Psychiatric Registrar, Graylingwell Hospital, Chichester.

DEVON AND CORNWALL

Name	*Appointment*	*Formerly*
YOUINGS, M. D., M.B., B.S. (LOND.).	S.H.M.O. in Infectious Diseases, Scott Isolation Hospital, Plymouth.	J.H.M.O. at same hospital.
AKEHURST, A. C., M.B., B.S. (LOND.), F.R.C.S. (ENG.).	Senior Surgical Registrar, Exeter Clinical Area.	Surgical Registrar, United Bristol Hospitals.
SINGHA, H. S., M.A., M.B., B.CHIR. (CANTAB.), F.R.C.S. (EDIN.), AND (ENG.).	Surgical Registrar, South Devon and East Cornwall Hospital, Plymouth.	Junior Registrar, Surgical Outpatients, The London Hospital.